Custos Borealis : the military in the Canadian North

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THE MILITARY IN THE CANADIAN NORTH

BY

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ABSTRACT

The notion of the Canadian North is best understood as the region beyond the frontier of civilization defined by the national road and rail grid. The northern frontier has continually receded in the face of encroaching development to where today, the North could be defined roughly as encompassing the Yukon and Northwest Territories--the lands and seas "North of 60".

Strategic perceptions of the North have changed several times during the twentieth century. Initially, the North was simply ignored; later--by the mid 1930s--it was perceived as a strategic barrier more formidable than either the Atlantic or Pacific Oceans. During the Second World War and the Cold War, with the views of the United States in the dominance, the area was seen as an approach--initially to Europe and Asia; later to the heartland of North America. In contemporary Canada, the North is seen as having instrinsic value, and as such is deserving to be watched over, protected and, if necessary, defended.

Military forces have been involved periodically in the North since the days of the Klondike Gold Rush in 1898. The intensity and degree of this involvement has reflected the changing perceptions of the North. Military presence can be analyzed as relating to defence, protection of sovereignty and national development, although naturally many specific programs have overlapped. American involvement, starting with the United States' entry into the Second World War and continuing into the present has been extensive but primarily concerned with defence.

Military activity has been a significant factor in the development of northern infrastructure both as deliberate national development programs and as the by-product of defence-related construction activities. While the military has had a considerable impact on the North, the northern fact has had surprisingly little impact upon the Canadian military. The Canadian Forces are just beginning to comprehend the unique aspects of the North and to develop programs and policies appropriate to contemporary northern realities and the assigned military responsibility to be Custos Borealis--Keepers of the North.

TABLE OF CONTENTS

LIST OF MAPS

PREFACE

I was a high school student living in the Yukon in the late 1950s when I had my first contact with the military in the Canadian North. During summer holidays I worked for the Canadian Army on a construction crew rebuilding the bridge at Mile 588 on the Alaska Highway, the point where American engineers working from the south met their compatriots descending from the north to open up the pioneer military road to Alaska in the dark days of 1942. Later I worked on the road along the Canol Pipeline--possibly one of the greatest white elephants in military history, but nevertheless an impressive feat of engineering in itself.

Ten years later as a professional soldier I had my first look at the barren lands during a winter warfare course held at Churchill, Manitoba. A few years later, training with the Canadian component of NATO's Allied Command Europe Mobile Force North took me back to my old stamping grounds along the Alaska Highway in preparation for a deployment to Norway.

When my battalion returned from winter training in northern Norway, I brashly informed my commanding officer that I had been cold long enough, and that I was ready "to hang up my snow shoes". His sympathy was minimal. He sent me off on the first regular serial of New Viking, a foot patrol exercise series in the Canadian North designed to provide arctic indoctrination while at the same time creating a modest military presence in the interests of Canadian sovereignty. My patrol area took me to the north and west of the village of Coral Harbour on

Southampton Island in Hudson Bay. Here I came into contact with the utter isolation that characterizes so much of the Canadian North and the navigator's bug-bear, the unreliable magnetic compass. I also met my first Eskimo, an elderly gentleman on his way to his char fishing grounds "two sleeps away". He used up most of our meagre supply of sugar in the cup of tea he shared with us, but more than repaid us for our humble hospitality by supervising our initial attempt to build an igloo.

My next posting was as a company commander in 1er Commando of the Canadian Airborne Regiment at the time of major northern exercises in 1971 and 1972. These took me on training parachute assaults into Resolute and Frobisher Bays in the High Arctic and in later years back to Churchill and Whitehorse.

In the spring of 1974, as a staff officer at Regimental Headquarters, Canadian Airborne Regiment, I was assigned the task of preparing a staff college presentation on "Northern Operations". I had as much northern experience as any officer then serving in the Regiment, but when I actually sat down to write the script I was astounded to discover how little I really knew about the military in the North. Major published works on the Canadian military contain only passing references to northern operations; the same may be said of standard texts on the North itself. I did discover that fragments of northern military history can be found in some rather obscure military periodicals. On the whole, it was a rather discouraging revelation. These thoughts were still in my mind when, a few weeks later, I was named a National Defence Scholar for 1974-76. This thesis is the outcome of my northern experience and interest.

A word about the time frame is perhaps in order. I have chosen 1898 to begin as it marked the first occasion that a Canadian military

force was deployed into the North. 1975 was selected as a closing date for detailed analysis, as it marked a point of stabilization of military activity in the North following the re-orientation of Canadian defence policy in 1969.

The term "North", as used in this study, refers to those Canadian lands and waters lying generally north of the 60th parallel of latitude. The term "Arctic" is used to describe lands and waters situated north of the treeline. "Far North" and "High Arctic" are used synonymously and apply to those regions lying north of the continental land mass. The term "Northwest" is used, not in the political sense of Northwest Territories, but in the popular sense to encompass the Yukon Territory and the Mackenzie Valley.

The title, Custos Borealis (Keepers of the North) is taken from the motto of Canadian Forces Northern Region, the contemporary military headquarters with the responsibility of coordinating all military activity in the Canadian North.

The thesis is written from a Canadian perspective, draws upon Canadian sources in the main, and is primarily concerned with the activities of the Canadian defence establishment. Since the beginning of the Second World War, however, Canadian and American policies relating to continental defence have been intertwined in a most complex fashion. The United States has had a hand in all the great defence projects undertaken in the North since that time. American military activities in the Canadian North are therefore included in this study since most of these were, at least nominally, joint projects and have done much to shape the modern North.

The aim of this thesis is to examine the historic involvement of

military forces in the Canadian North between 1898 and 1975. The study seeks to answer two main questions: what effect has the Canadian North had on the defence policies of Canada and, to a lesser extent, of the United States; and, secondly, what effect has the presence of Canadian and American military forces had on the Canadian North. Military activity and programs in the North relating to this focus are analysed in terms of national defence, national sovereignty, and national development.

Since both military studies and northern studies are legitimate academic disciplines in Canada, I have attempted to satisfy the needs and interests both of defence scholars who may know little of the North, and of northern scholars who may know little of military matters. This study takes the form of a total overview. Hopefully, it will serve as a structural form and perspective for other scholars who will subsequently address the wide range of topics and issues raised here but which remain to be studied in detail.

There are a number of individuals and agencies whose support in the writing of this thesis I wish to acknowledge.

The Canadian Department of National Defence released me from regular duties for a two-year period and funded both my attendance at King's College and my research travel program. In particular, Captain (N) Bernard C. Thillaye, the Director of Strategic Policy Planning, supported my efforts in many ways. The opinions expressed in this study are not necessarily those of the Department of National Defence.

Dr Wolf Mendl of the Department of War Studies of King's College, London, supervised the thesis.

Brigadier-General K. J. Thorneycroft, Commander, Canadian Forces Northern Region between 1975 and 1978, and his staff were most helpful

in arranging for me to see much of the modern North during the four month period I was attached to Northern Region Headquarters for research purposes.

Dr W. A. B. Douglas, Director of History, National Defence Headquarters, and his staff, provided me with a working area, access to the open documents held by the directorate and the company of an astute group of military historians.

Dr G. de Q. Robbins and the staff of the Scott Polar Research Institute, Cambridge University, made me welcome in that great centre of northern studies during the period that I was actually writing the thesis.

The typescript and bibliography were prepared by Ms Raymonde Bissonnette.

The maps were prepared by the Graphic Arts Section of Mobile Command Headquarters.

The above list is by no means all-inclusive. Many other people contributed in different ways to this project; I apologize for not listing everybody here.

What errors and omissions that do remain are, of course, entirely my own responsibility.

CHAPTER I

INTRODUCTION

The "North", to Canadians, is more of an idea than a place.

At the time of Confederation in 1867, Canada encompassed a relatively small area centered on the St-Lawrence River watershed and the Atlantic seaboard. Anywhere north or west of Lake Nipigon was termed "The North". A full range of economic, political, social, and nationalistic factors were at play, however, and combined in the new nation to create a strong imperative of expansion. In those early years, there was some question as to the ultimate direction expansion should take, and of the priorities for national development.[1]

In 1870, Canadian territory was increased by 2.5 million square miles. The Pacific coast colony of British Columbia became a province, and the imperial government gave Canada the vast tracts of land formerly controlled by the Hudson's Bay Company. This latter area, composed of Rupert's Land and the North-Western Territory, gave the Dominion de jure control over the entire continental land mass north of the 49th Parallel with the exception of Labrador, part of the British Crown Colony of Newfoundland, and the American territory of Alaska.

While the Canadian government grappled with the problems of a

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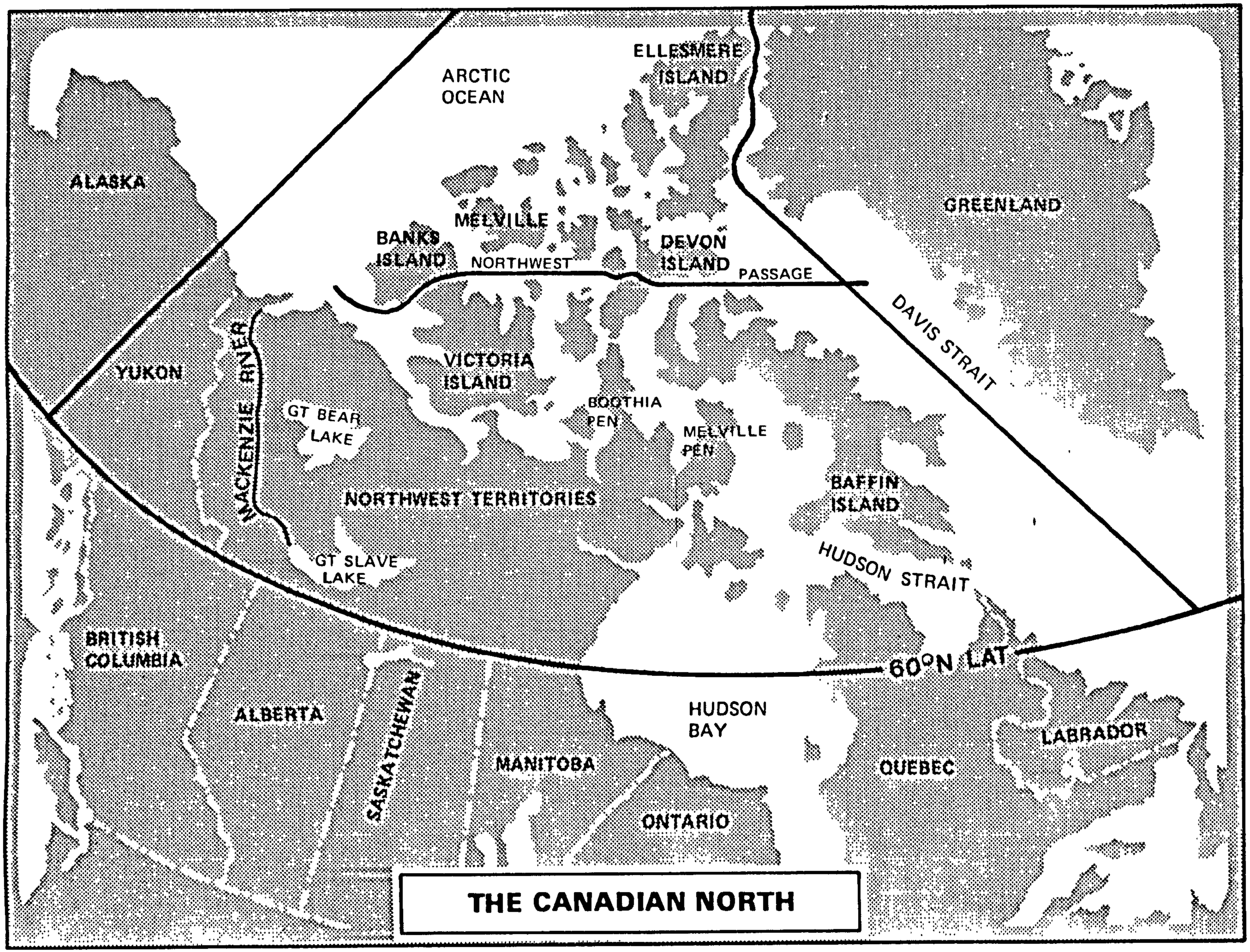
[1]See Morris Zaslow, The Opening of the Canadian North 1870-1914 (Toronto: McClelland and Stewart Limited, 1971), for a detailed discussion of Canadian national expansion. The most useful single volume history of the Canadian North is R. A. J. Phillips, Canada's North (Toronto: Macmillan of Canada, 1967).



THE CANADIAN NORTH

route for the essential transcontinental railway and other development problems, another territorial accession came into the offing--the Arctic Archipelago. Knowledge of the North American High Arctic was still imperfect in 1870, but the majority of the larger islands had been identified and claimed for Britain by early explorers of the late sixteenth and early seventeenth centuries, and by the Royal Navy in the nineteenth century. In 1874, Britain asked the Canadian government if the Dominion had any interest in taking up sovereignty over these Arctic Islands. The Liberal government of Alexander Mackenzie replied affirmatively, and the imperial government issued an Order-in-Council to that effect.

It took six years and constant prodding by Britain to effect the transfer. The reality of the situation was that Canada was already faced by an embarrassment of territorial riches, and the prospect of more land was almost overwhelming. Few Canadian public figures had any idea of what to do with the islands. At best, it was thought that they might prove to be of use at some distant future date. Probably the most perceptive analysis of the Canadian attitude at the time of the transfer of the islands was made by a member of the Colonial Office who observed:

> The object in annexing these unexplored territories to Canada is, I apprehend, to prevent the United States from claiming them, and not from their likelihood of their proving of any value to Canada.[1]

With the accession of the Arctic Archipelago, the northward expansion of Canada was complete. Canadians as a whole, and the government in particular, could not have cared less. There is no evidence that anybody gave a thought to these far northern lands at the time.

The Canadian Pacific Railway finally was completed in 1885. By

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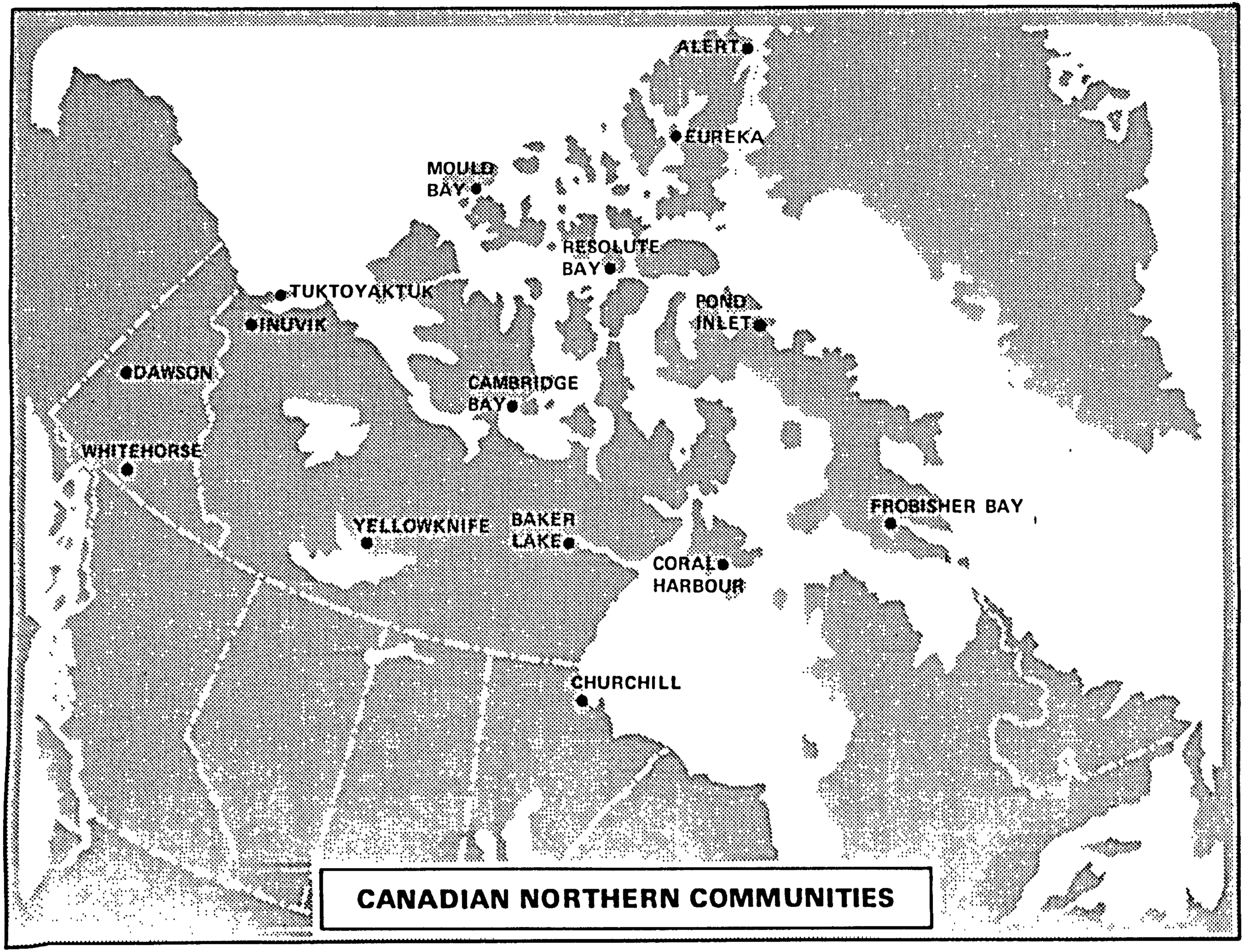
[1] Cited in Gordon W. Smith, "Sovereignty in the North: The Canadian Aspect of an International Problem", in R. St. J. Macdonald, ed., The Arctic Frontier (Toronto: University of Toronto Press, 1966), p. 203.



CANADIAN NORTHERN COMMUNITIES

selecting a southerly route, the government effectively set the pattern for Canadian population expansion and industrial development for at least two generations: Canada was to develop on an east-west axis. The lands beyond the communities that sprang up along the rail lines became "The North", and were, on the whole, forgotten. Given the limited population and available capital of the country, the North could be developed later. In many ways, the North is still waiting.

If the North was forgotten in the sense that it was eliminated from national programs of development, North Americans and many Britons retained a deep and abiding romantic interest in the area. Images of mystery and unbounded potential were strong. Adventure stories of the fur trade and the arctic whale fishery, the only two northern industries, were heady stuff in the age of Victoria. The challenge of the unknown was equally compelling, and accounts of attempts to gain the North Pole, to discover the Northwest Passage, or to find the lost Franklin expedition were avidly read in Canadian, American, and British homes alike.

The potential of the North was seen as being latent. In terms of common mineral resources, the southern reaches of the country had already proved all that could possibly be exploited in the nineteenth century. Iron, lead, zinc, nickel--these were the minerals of early Canada. Precious metals were different, for no matter how far from civilization the sources might be, a man could always make a fortune beyond his wildest dreams if only he could make that one big strike. There already had been major finds in the undeveloped territories of North America. Silver had been found in Colorado, and gold in California and the Caribou Mountains of British Columbia. As the nineteenth century drew to a close, a few hardy souls were probing distant reaches of the Canadian Northwest convinced

that somewhere there was gold for the taking.

The third aspect of the North that interested nineteenth century Canadians and others were the peoples of that frozen land. The Eskimo[1] fascinated southern dwelling white men. Accounts of the harsh environment in which the Eskimo lived and the incredibly fine adaption of his culture and technology to that environment were read with great interest. Those whites who actually came into contact with Eskimos tended to chronicle their contacts in no small detail. Northern dwelling Indians, on the other hand, were ignored as literary subjects in favour of their culturally more sophisticated kinsmen of the plains and the Pacific coast.

This then was the Canadian North around the turn of the century: an area cloaked in mystery and romanticism; an area partially explored and largely unmapped; an area where Canadian title and sovereignty had not been tested. The Eskimos in the Arctic barrens and the northern Indians below the tree line still lived, in the main, as they had since time immemorial, touched here and there by the white man's culture in the persons of explorers, fur traders, whalers, and the occasional missionary. It was a land of unrealized potential, a land encompassing a frontier and a mind-numbing expanse of territory beyond that frontier.

There is an unfortunate tendency for Canadians even today to think of the entire North as a snow covered treeless wasteland. Nothing could be further from the truth. The Yukon consists of plateaus and

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[1]The term "Eskimo" came into the English language when early explorers were told of that northern race by Cree Indians. The term is pejorative in that in the Cree tongue it means "eater of raw flesh". (Not to be outdone, the Eskimo called the Cree "louse eggs".) Modern Canadian convention and the Eskimos themselves favour the term "Inuit", (the people). Inasmuch as the majority of events examined in this study occurred during the period when "Eskimo" was the common usage, the term is used as a standard convention throughout, except in those cases where the term "Inuit" is essential to the point of the argument.

towering mountains. Coniferous trees are found throughout the territory except, of course, at higher altitudes on the mountain slopes. The Northwest Territories are dominated by the Canadian shield, a low lying, rough land with innumerable lakes on the continental land mass, but tipped up along the islands that fringe the Eastern Arctic into mountains that rise to over 8,000 feet. The islands of the western Arctic Archipelago, on the other hand, are flat and rolling.

The treeline, which defines the southern limit of the Arctic begins near the mouth of the Mackenzie River and cuts southeast to the foot of James Bay and then swings northeast to the south of Ungava Bay. The treeline is not sharply defined. The coniferous trees of the boreal forest, or taiga, become smaller and sparser until eventually they are gone, giving way to the scrub, moss and lichens of barrens, or tundra. It is the tundra that most closely coincides with the popular image of the North.

Permanent ice caps and glaciers cover much of Devon and Ellesmere Islands and the islands of the Sverdrup Group. These are the only areas that are permanently covered with ice or snow. Throughout the rest of the North, summer can be as long as June-September in the southern portions of the territories to a brief month on Ellesmere, the most northerly arctic island. The traditional seasons of spring and autumn are replaced by break up and freeze up--referring to the departure of the winter ice from rivers, lakes and bays and its inevitable reformation marking the onset of the next winter.[1]

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[1]Terrence Armstrong, George Rogers, Graham Rowley, The Circumpolar North: A Political and Economic Geography of the Arctic and Sub-Arctic (London: Methuen & Co Ltd, 1978), pp. 73-76.

The military is a comparative newcomer to the North. Before the coming of the white man, there doubtlessly were unchronicled clashes between hunting bands of Eskimos and Indians in those few areas where these races were in occasional contact. There was nothing, however, that even remotely approached the tribal warfare that was endemic in the more southerly reaches of the continent. It is possible that the constant struggle with the environment left_northern inhabitants with little energy for organized violence.

Europeans came to the North for many reasons.[1] There is evidence that around 1000 CE Vikings from Greenland or Iceland were prowling around Baffin Island, either because they were lost or simply curious. Martin Frobisher first came in 1576 searching for the Northwest Passage to the Orient. He returned again and again looking for gold. It is difficult to say which of his objectives was the more chimerical. The North's treasure house of resources remained locked for another century: "The Gentlemen Adventurers of England trading into Hudson's Bay" were granted a charter on May 2, 1670 to exploit the classic northern resource--fur. Over three centuries the fur trade has had its moments of glory and its times of disaster; today it still thrives. The Hudson's Bay Company is unquestionably one of the great northern institutions that has done much to shape the face and culture of the region. The dozens of northern communities that have "fort" place names--Fort Reliance, Fort Good Hope, Fort Resolution, Fort Nelson, Fort St-John--were founded, not as military garrisons, but as trading posts.

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[1] A useful and immensely readable collection of primary source accounts of the opening of the Far North is the Polar Trilogy, edited by Farley Mowat. Included in the series are: Ordeal by Ice: The Search for the Northwest Passage, 1960; The Polar Passion: The Quest for the North Pole, 1967; and Tundra; Selections from the Great Accounts of Arctic Land Voyages, 1973 (Toronto: McClelland and Stewart Limited).

The North has known war only once. In the latter years of the seventeenth century and into the early years of the eighteenth, France and Britain struggled for mastery of a continent. The conflict spilled into the southern reaches of Hudson Bay. Today, massive Fort Prince of Wales stands abandoned, a forlorn reminder of those days. The North has been at peace ever since.

In the nineteenth century, military men of Great Britain and, to a lesser extent, of the United States, swarmed into the North. They came not to fight, not to conquer, but to explore. They explored the upper reaches of the boreal forest and the barrens of Keewatin. Most of all, their efforts were concentrated in the arctic waters where they sought first, a Northwest Passage, and later, the Pole. They also came as part of official naval cruises and as leaders of privately funded ventures to search for Franklin.[1] For the military men of Canada, however, the North remained terra incognita until the turn of the century.

The preliminary exclusion of the military from a frontier role was a result of the special set of circumstances and political perceptions that existed in Canada during the early 1870s. In 1870, the maintenance of law and order in the new territories became a problem. The Red River Rebellion, which flared up in the summer, resulted in a small expeditionary force being raised to put it down. An illicit whiskey-fur trade which had sprung up near the American border destabilized relations between settlers and the Indian tribes of the area. It was apparent to the federal government that some sort of garrison force would have to be raised for service in the Northwest.

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[1] A by-product of the Franklin search was the preliminary mapping and charting of much of the Arctic Archipelago. The gazeteer of the Arctic Islands reads like a nominal roll of the nineteenth century Royal Navy.

The western situation continued to deteriorate and in the summer of 1872, Colonel P. Robertson-Ross was dispatched on "A Reconnaissance of the North-West-Provinces and Indian Territories of the Dominion of Canada". He strongly advocated the creation of a force to provide law and order.[1] Similar demands came from Hudson's Bay Company traders and other law abiding citizens living in the area. The cry was taken up in both the House of Commons and the Senate. The general consensus was that what was needed was either a military force with the powers of police, or a police force with military organization, discipline, and equipment.

Robertson-Ross, perhaps reflecting his background and perspectives as a professional soldier, recommended the raising of a military force and a supporting local constabulary. Sir John A. Macdonald, the Prime Minister, had different ideas: he envisioned a para-military police force modelled on the Royal Irish Constabulary.[2] As early as the winter of 1869-70 he outlined his ideas to a prospective commander, saying:

> The best Force would be Mounted Riflemen, trained to act as cavalry, but also instructed in the Rifle exercises. They should also be instructed, as certain of the Line are, in the use of artillery; this body should not be expressly Military but should be styled Police, and have the military bearing of the Irish Constabulary.[3]

Various factors combined to bring a halt to the initial attempt

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[1]Capt Ernest J. Chambers, The Royal North-West Mounted Police - A Corps History (Montreal: The Mortimer Press, 1906), p. 11. The full text of Robertson-Ross' report is published herein pp. 11-16. Robertson-Ross was a regular British officer seconded to Canada to act as Adjutant General of the Militia.

[2]S.W. Horral, "Sir John A. Macdonald and the Mounted Police Force for the Northwest Territories", The Canadian Historical Review, Vol. 53, No. 2, June 1972. Horral, the present Official Historian of the Royal Canadian Mounted Police, deals with many of the myths that surround the establishment of the RCMP.

[3]Cited in Horral, p. 181.

to raise a frontier security force, and the matter remained in abeyance for three years while the government considered the seriousness of the problem and possible other means of dealing with it. Macdonald spoke frequently of "mounted rifles", but it is clear that he remained steadfast in his determination to have a police force. The North-West Mounted Police Act, an enabling act, was given Royal Assent on May 23, 1873.

The organization of the force proceeded slowly during the summer and autumn. Macdonald, whose government was facing the scandal that would ultimately bring it down, was fighting for his political life and had little time to spare to consider the problems of the North-West. His successor, Alexander Mackenzie, was less convinced than Macdonald that a federal police force was preferable to a military garrison. In point of fact, Macdonald's ideas had not gained wide acceptance in political circles and the Canadian military establishment continued to maintain that only regular troops could adequately control the situation. It would appear that support for the police force was strongest in the Department of Justice, and it was arguments from that quarter that ultimately led Mackenzie to continue the police project.[1] The rest of the story is the history of the Royal Canadian Mounted Police.

The 1873 decision to raise a special police force effectively eliminated the Canadian military from what could have been a challenging responsibility, a magnificent training vehicle, and a real raison d'être. When the tide of development later began its slow flow northward, succeeding Canadian governments turned instinctively to the Mounted Police to carry the flag; the success of the Force in the prairies was a fine recommendation to select that option. In the Yukon during the Klondike

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[1]Horral, pp. 198-199.

Gold Rush, down the Mackenzie River, around the rim of Hudson Bay, and later, into the far reaches of the High Arctic, it was the men of the Mounted Police who brought the authority of the federal government into the new territories. Canadian soldiers remained in the South with the thankless task of preparing to protect a country which most politicians and many citizens felt required little, if any, defence.

* * *

Canada inherited the beginnings of a military establishment from Great Britain at the time of Confederation. In 1871 the Treaty of Washington dealt with the points of contention between Britain and the United States that had arisen out of the American Civil War. With relations regularized, the British battalions which had garrisoned Canada even after Confederation were withdrawn and, in a sense, Canada was left to fend for herself. In reality, Canada was probably as secure from aggression as any nation on earth. Sheer distance removed her from the European and Asian arenas of conflict. The Atlantic and the Pacific were formidable barriers to invasion. That some nation might attempt to invade Canada across the polar wastes was unthinkable and technologically impossible. To further strengthen the Canadian bulwarks of defence there was the ubiquitous Royal Navy. The only possible foe was the United States, and as long as the maintenance of friendly relations with that country remained one of the cardinal tenets of British foreign policy, Canada was secure. Given these strategic considerations, it is little wonder that the Canadian defence establishment was impoverished from the very start.

Immediately following the Treaty of Washington, the Canadian military establishment plunged into a decline from which it was just

emerging when the country was engulfed by the First World War. Military enthusiasm, which had run high during the time of the Irish-American Fenian Raids, waned. The withdrawal of the British units represented the loss of the professional core and the vital training cadre of Canada's soldiers. An economic depression led to slashed defence budgets, smaller establishments, and curtailed training periods. There was a nation to build, a continent to conquer: opportunities and challenges abounded. Few Canadians had much interest in "playing soldier".

The heart of the Canadian military establishment was the Active Militia, a part-time volunteer force that trained up to two weeks per year. A tiny Permanent Force was raised in the 1870s to maintain the military installations abandoned by the British Army and to provide a training cadre for the Active Militia. With its small size and plethora of tasks, the Permanent Force was hard pressed to attend even to its own training, let alone that of the Active Militia. A fair description of the army nearing the turn of the century would be a minimal force, indifferently trained, and poorly equipped.

Canada, with the longest coastline of any nation on earth, had no navy.

As the nineteenth century drew to a close, few Canadians had ever seen, let alone understood, even part of the North. Of the whites who had probed various regions, few, in fact, were Canadians. Of the handful of Canadians who had shared the North with American whalers, Scots fur traders, English missionaries, and the native peoples, none were soldiers. No situation had ever arisen which, in the government's view, required a Canadian military presence in the North. No Canadian military leader had ever shown the slightest interest in the country's northern frontier.

Before the century closed, however, the discovery of gold in the Yukon presented a situation which neither the government nor the Militia could ignore. This marked the beginning of an association between the Canadian military and the North which has endured, sporadically, to the present.

CHAPTER II

FALSE START

The Yukon Field Force: 1898-1900

In February, 1898, Parliament opened in a Canada rushing towards the twentieth century. Wilfrid Laurier's Liberal party was at the beginning of its long tenure of power and the dynamism of the new administration was still growing. The country was finally sloughing off the effects of a long depression and moving confidently towards prosperity. The Empire was at peace. In the Northwest, the Klondike Gold Rush, that fine example of *fin du siècle* madness, was in full swing.

Gold had been discovered in the Klondike region of the Yukon District in the summer of 1896. During the winter, the handful of prospectors who were in the area and staked the early claims made their fortunes. The rest of the world knew nothing of this. In the summer of 1897, two steamers arrived in San Francisco and Seattle bearing jubilant miners who literally staggered off the ships under the weight of the gold they were carrying. The news of the strike spread like wildfire, and captured the imagination of a continent. The Rush was on. In many ways, the news of the strike happened at just the right point in history.

Describing the mood of the era Pierre Berton wrote:

> . . . it was an era occupied with money or preoccupied with the lack of it. It was an age, in the words of its historian Mark Sullivan, when moneymaking was the most prized career." No wonder the continent went insane when two ships loaded with gold steamed in from out of the Arctic mists.

For "gold" was the magic word of the nineties.[1]

If the popular attitude was "right", so was the time:

> The Klondike stampede did not start slowly and build up to a climax, as did so many earlier gold rushes. It started instantly with the arrival of the Excelsior and Portland, and reached a fever pitch at once, and remained at fever pitch until the following spring, when, with the coming of the Spanish-American War, the fever died almost as swiftly as it arose.[2]

As Parliament met, its members could not have known that the rush was already over. The previous year, both the American and Canadian Ministers of the Interior had issued public warnings against attempting the arduous trip to the Klondike. They were ignored.[3] What was known was that a horde of people were in the process of descending upon the town of Dawson. How many more were on their way was anybody's guess. Some said fifty thousand, others said a hundred thousand; still others claimed that a full quarter million would arrive in the Yukon.

The subtle nature of this problem emerges in the prolonged debate in the House of Commons and the Senate over the proposed Canadian Yukon Railroad. There was general agreement on both sides of the House that an all-Canadian railroad to the Yukon would be a desirable feature for both nationalistic and economic reasons. There was a general underlying fear held by most Canadian politicians that a crisis could develop in the Yukon. It was envisioned that a lack of food, a breakdown in government services, or even a failure of the law enforcement agency to control the situation might result in a complete loss of Canadian control of the area. The situation was further complicated by the stated intention of the

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[1]Pierre Berton, Klondike - The Life and Death of the Last Great Gold Rush (Toronto: McClelland & Stewart Limited, 1958), p. 101.

[2]Ibid., p. 100.

[3]Ibid., p. 122.

United States to send a relief expedition with food supplies into the Alaskan area of the gold fields via the Canadian route. The fact that it was the hope of the United States to use troops to carry out this resupply mission, albeit not under arms, caused no little concern in Ottawa.

The Yukon Railway Bill was introduced in the House of Commons on February 8, 1898. In arguing the case for the proposed system, the Liberals painted a grim picture of what might happen were the Yukon transportation system to fail, given the huge influx of people into the region. They spoke of the possibility of thousands of starving men struggling for a scanty food supply. Such a situation, it was claimed, would result in "a perfect carnival of crime" which the North West Mounted Police would be unable to control.[1]

From the opposition benches, a Mr. Wallace rose to refute the breakdown of law and order scenario. He noted that in the various mining communities in the isolated wilds of British Columbia there had been no such breakdown of government services in similar conditions to that which the Yukon miners were facing. He did allow, however, that:

> I think it a quite proper safeguard to send a force to the Yukon territory, a moderate force, not one involving such an enormous expense; because I think the returns will show that the expense of sending so large a force up there at the time has been very great.[2]

Wallace's concern was more with the perceived threat posed by the United States. He foresaw the need for a small expeditionary force to counterbalance the anticipated foray into the area by the troops of the United States Army on the planned relief mission:

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[1]Canada, Debates, House of Commons (henceforth: Debates), 1898, p. 189.

[2]Ibid., 1898, p. 222.

> (T)hey wanted to get a military foothold, they wanted to get some sort of possession of our Canadian territory. We know what their dealings with Canadians and British people have been. They get a foothold here and a foothold there and when they once get possession, it is extremely hard to dispossess them.[1]

At this point, the Minister of the Interior, Mr. Clifford Sifton, entered the debate. He scorned the opposition's view of the United States as a hostile and aggressive power with respect to the Yukon situation. He could envision no deliberate act on the part of the government of the United States that would weaken Canadian sovereign claims to the Yukon. He returned to the theme of the breakdown of law and order, but here he admitted implicitly that there was an American threat. It was noted that the majority of the Klondike adventurers were citizens of the United States. He emphasized the need for a Canadian railroad into the area so that food supplies, government services, and law enforcement personnel could easily enter the region. Without the railroad, he anticipated a winter in which:

> We would have to face the fact that 200 or 300 of our officers would be surrounded by starving thousands of armed men, of alien men, not citizens of Canada, but citizens of foreign countries, and these men would have possession of the Yukon district instead of the Government of Canada . . . . (W)e have before us the great danger of the authority of this Government being overridden, being destroyed, and the Government of that district being, theoretically, if not actually, taken out of our hands.[2]

Railroad or no, the government began to consider steps to be taken to reinforce the forces of law and order operating in the Yukon.

Those forces of law and order were, admittedly, rather weak. In August of 1897, when Klondike fever was only a few months old, there were forty members of the North West Mounted Police stationed in the Yukon.

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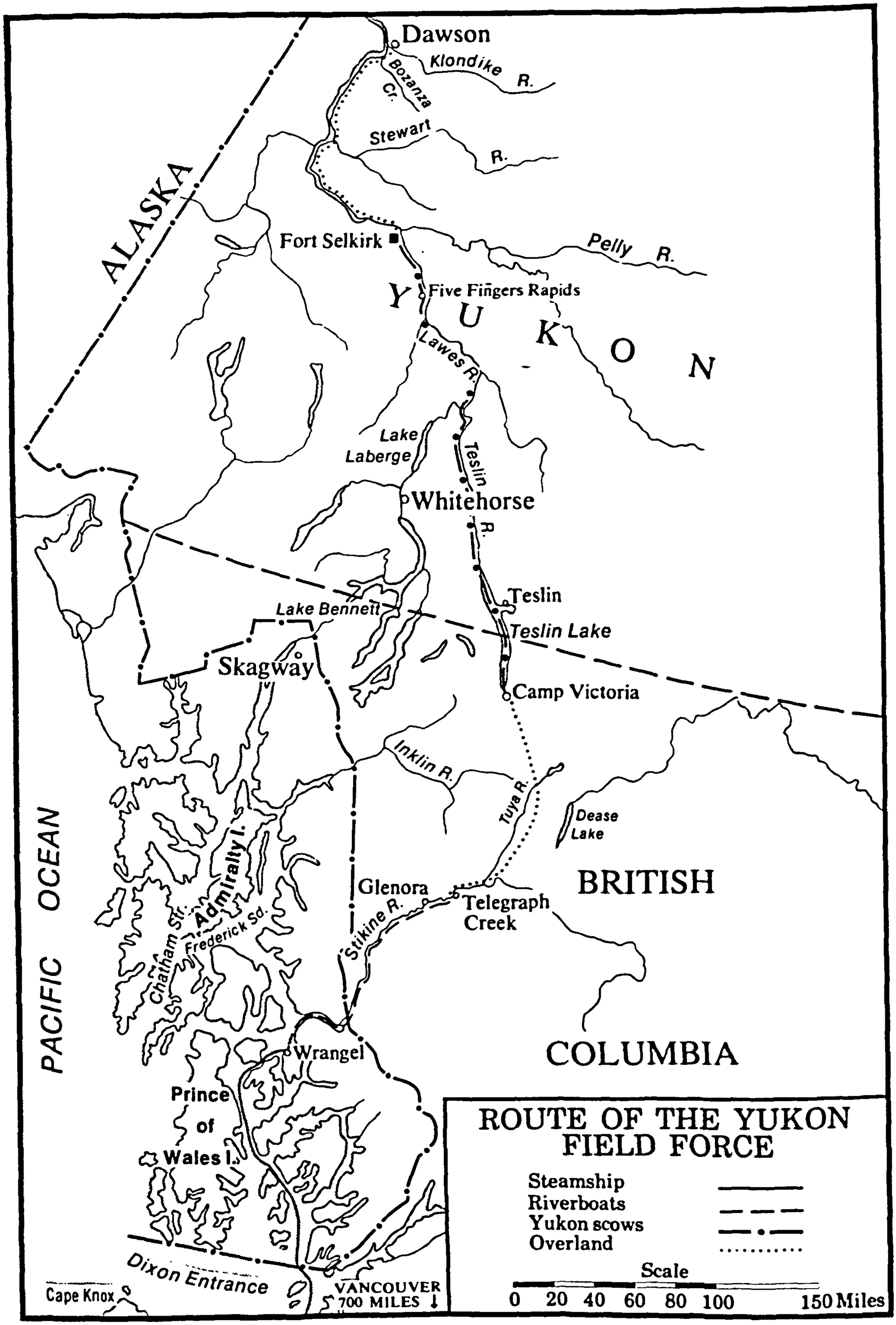
[1] Ibid., 1898, p. 234.

[2] Ibid., 1898, p. 625.


Dawson
Klondike R.
Bozanza Cr.
Stewart R.
ALASKA
Fort Selkirk
Pelly R.
Five Fingers Rapids
YUKON
Lawes R.
Lake Laberge
Teslin R.
Whitehorse
Teslin R.
Teslin
Lake Bennett
Teslin Lake
Skagway
Camp Victoria
Inklin R.
Tuya R.
Dease Lake
BRITISH
Glenora
Stikine R.
Telegraph Creek
COLUMBIA
Chatham Str.
Admiralty I.
Frederick Sd.
Wrangel
Prince of Wales I.
PACIFIC OCEAN
Dixon Entrance
Cape Knox
VANCOUVER 700 MILES
ROUTE OF THE YUKON FIELD FORCE
Steamship
Riverboats
Yukon scows
Overland
Scale
0 20 40 60 80 100 150 Miles

Their numbers were quickly increased to a hundred, and then increased again. In February, 1898, their strength rose to 162, including scouts, special constables, and dog handlers; by June the figure was 239. The recruiting of new constables forged ahead, but it soon became evident that for both financial and manpower reasons, there were simply not enough federal police to fill the anticipated need in the Yukon.[1] The government turned to the Department of Militia and Defence.

Military planning for the Yukon force began immediately.[2] Rumours of the expedition began to circulate throughout the Active Militia and a veritable flood of volunteers applied to the Adjutant General for a place in the force.[3] The need, however, was for trained men, and the personnel of the Active Militia in 1898 could not have been considered trained by any stretch of the imagination. The burden fell on the Permanent Force.

On 10 March, when an opposition member asked in the House of Commons about the rumours that were circulating about "a detachment of the militia or of the permanent force of Canada to be sent to the Yukon to supplement the Mounted Police force there," the Prime Minister replied:

> (I)n view of the very large influx of people who are expected to crowd into the Yukon, it has been thought advisable to have a sufficient force there to maintain law and order. This could not be done unless the Mounted Police, which is practically a military body, were largely increased. But we have thought it well to follow the practice that has obtained in other countries and since

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[1] Ibid., 1898, pp. 452, 7353.

[2] There is no major published work on the Yukon Field Force. The Force is the subject of an unpublished honours BA thesis. See John B. Windsor, "The Yukon Field Force" (Victoria, B.C.: University of Victoria, m.s. unpublished, 1972). Unfortunately this study is not generally available. There are no known existing personal journals or diaries written by members of the Force.

[3] Public Archives of Canada (henceforth: PAC), RG 9 II B1 (Correspondence of the Adjutant General's Office), Vol. 1, 499, miscellaneous entries.

> we have a small permanent force, to employ it in that country, where the need has recently arisen.[1]

Accordingly, on 21 March, 1898, an Order-in-Council was signed to the effect that "a Field Force composed of volunteers from the permanent troops of the Dominion should be despatched to Fort Selkirk."[2] The issue was not immediately raised in the House, and in point of fact, the troops were already on their way when an opposition member asked for details, noting that, "it is going to cost a large amount of money, and that . . . the matter has not been discussed in the House at all."[3]

In replying to the question, F. W. Borden, the Minister of Militia and Defence, provided an insight into the government's rationale in what was for Canada, an unprecedented event, saying:

> the principal object of the militia is to support the civil power, and it is for the purpose of aiding in this respect that it is proposed now to send this force into the Yukon country.[4]

The Minister went on to note:

> it was intended to increase the mounted police force, but on further consideration it was thought that it would better serve the objects in view to send a detachment of the permanent force, which would establish a central force in that country, would have a certain decided moral effect upon the scattered population through the district and if necessity demanded, would be ready to assist in enforcing law and maintaining order there.[5]

Questioned on comparative costs of the two options, the Minister was quick to point out that the force of soldiers would cost the government considerably less than would an equivalent-sized body of Mounted Police.[6]

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[1] Debates, 1898, p. 1577.

[2] Cited in Canada, Sessional Papers, Report of the Department of Militia and Defence (henceforth: Militia Report), 1898, p. 24.

[3] Debates, 1898, p. 4604.

[4] Ibid., p. 4795.

[5] Ibid. [6] Ibid.

The deployment of the Yukon Field Force in many ways went beyond simple aid of civil power. A centralized military force in the heart of the Yukon also stood as a formidable symbol of national sovereignty. In this respect, the sovereignty function of a pure military force went beyond even that which could be established by a para-military force such as the Mounted Police were at the time. When deployed, the force would indicate to all and sundry the will and intention of the government to use as much force as necessary to maintain the fule of Canadian law in the Yukon.

A further aspect of the decision to form the Yukon Field Force that merits attention is the cost factor. It was intended to use the military as virtual auxiliaries to the Mounted Police. To this end, the government went so far as to confer honorary military ranks on the two senior police officers in the district.[1] All other things being equal, the savings offered by the military alternative were attractive to the government.

There is no evidence that any responsible official of the United States government advocated a policy of American territorial expansion into the central Yukon. Similarly, Laurier's government did not believe that the Americans were seeking to expand geographically at Canadian expense in this particular instance. Extreme remarks by a few elected representatives on both sides of the border may safely be ignored.

The "loss of control" scenario, however, was a real Canadian concern. At least eighty per cent of the gold seekers in the Yukon were citizens of the United States. Virtually every adventurer had a personal firearm of some kind. It was feared that a spontaneous riot, or even a

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[1]PAC, RG 9 11 A1 (Correspondence of the Deputy Minister of Militia and Defence), folio 16937.

planned "coup", could effectively neutralize the agents of the Canadian government in the area. From there it would be a short step to the establishment of a "provisional government" and a request to the United States to take over the administration of the territory. A development such as this was by no means without precedent: California and Oregon had come into the American Union along generally similar lines.[1]

The Yukon Field Force emerged as a hybrid unit. It appears that there was no way in which any of the three Permanent Force units alone would have been able to meet the requirement for troops, given their multitude of other tasks related to the training of the Active Militia. Thus, the Royal Canadian Dragoons, the Royal Canadian Artillery, and the Royal Regiment of Canadian Infantry were all ordered to provide troops. Command of the Force was given to Major T. D. B. Evans of the Royal Canadian Dragoons, who was promoted to the local rank of lieutenant-colonel for the period of his command.[2] The Force concentrated in the Ottawa area in April, 1898.

It was immediately apparent that the kitting and equipping of the Force would be no simple matter. For the first time, the Canadian defence establishment was forced to consider the single most important military characteristic of the North: isolation. In the Yukon, there were no established sources of services and supply. There could be no local purchase of essential commodities. The Force would have to be prepared to operate self-sufficiently once it was in the Yukon. The lists of the

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[1]There is no explicit expression of this concern by Canadian government officials, but it is implicit in many of the statements made in the House of Commons by members of the cabinet. Windsor draws the same conclusion. See pp. 90-93.

[2](E. Pye), "The Yukon Field Force", Canadian Army Journal, Vol. 4, No. 6, November, 1956, p. 30.

general stores that had to be transported and even of the items of the individual soldier's kit, is huge.[1] Even such a mundane item as uniforms presented problems, for not only did the troops require their regular field and garrison dress, but they also needed a durable fatigue uniform and special environmental clothing that would allow them to face the rigours of the winter.

It is not surprising that all the necessary equipment and environmental clothing for northern operations had to be obtained from civilian sources on special contract. The fact that Canada's soldiers were neither trained nor equipped to operate in the northern half of the nation had never previously concerned Canadian political or military leaders.

As the scheduled departure date for the force drew near, various individuals and groups made efforts to have themselves attached to the party, for the great problem facing anybody intending to work in the Klondike was to get there. A government organized expedition presented itself as a heaven-sent opportunity for civilians to solve the transportation/shelter/food problem. Four members of the Victorian Order of Nurses were accepted into the group. Their mission was to provide medical services in the Yukon,[2] and their presence in the district was in the interest of the government in terms of supplying needed services. Two Roman Catholic priests managed to join the expedition based on what appears to have been nothing more than the personal friendship of one of the clerics with the Prime Minister. A similar application by a British

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[1] PAC, RG 9, 11 A1, folio 71958.

[2] Ottawa Evening Citizen, 26 March 1898. That the ladies managed to get themselves attached to the Yukon Field Force is perhaps attributable to the fact that Lady Aberdeen, the wife of the Governor General, was the founder of the order.

scientific party was turned down.[1]

By May, 1898, the news of the Klondike had been pushed off the front pages of Canadian newspapers by reports of the events of the Spanish-American War. Perhaps inevitably, some of the "glamour" spilled over onto the Yukon Field Force. After all, there was Canada too dispatching her own, albeit small, expeditionary force. As the Ottawa Evening Citizen pointed out, the Canadian troops too were going to a far off land where they would face danger and hardship, although of a different scale and magnitude than that being encountered by American troopers and bluejackets.[2]

The capital gave the Force an impressive send-off. The troops were inspected by both the Prime Minister and the Governor General on different occasions. On the eve of their departure, the Minister of Militia and Defence hosted a farewell dinner for the officers to which several parliamentary notables and senior military officers were invited. On the morning of 6 May, 1898, just prior to entraining for the west, the Force officers breakfasted with the Governor General and the Prime Minister. A substantial crowd saw the troops off at the station.[3]

The crossing of the continent via the Canadian Pacific Railroad special train was something of a triumphant procession. The Force was feted in Winnipeg where they spent the night and paused briefly to pick up an additional draft of troops from the Royal Canadian Dragoons. Their arrival in Vancouver just after noon on 11 May was similarly a grand occasion. The Vancouver Province noted that the Force was "welcomed to the city by a huge crowd of citizens", and was later extended a formal

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[1]PAC, RG 9, 11 A1, folios 16688, 16713.

[2]Ottawa Evening Citizen, 7 May 1898. [3]Ibid.

welcome by the mayor and aldermen.[1]

It is interesting that both of the newspapers cited here fully supported the government's reasons for the dispatch of the troops. The sovereignty and law and order themes were paramount. The Ottawa Evening Citizen, editorializing on the need for a Yukon railroad noted:

> We were given to understand that famine and rebellion were lurking among the fastnesses and along the trails and that, if troops could not be hurried into the Klondike on short notice, the richest mining districts of the world might pass under the control of an alien population.[2]

The 203 members of the force, plus their associated hangers-on, departed Vancouver on 14 May aboard the steamship Islander.[3] The selected route was certainly not the easiest. The simplest and most direct route to the Klondike was undoubtedly via the American port of Skagway and over the White or Chilcoot Passes into the Yukon. There were several exclusively political reasons that led to the rejection of the direct route. The selected route followed the proposed course of the Canadian Yukon Railroad. After having touted the advantages of such a route in the House of Commons for months preceding the dispatch of the Force, the government was more or less obliged to support its own contentions about the advantages of the "all Canadian" route and to order the troops to follow it. The second reason was the diplomatic problems that might have ensued if a formed body of Canadian troops had to cross through American territory. There were many vocal objections in Canada against allowing American troops to traverse the Yukon on their way to Alaska. The govern-

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[1]The Vancouver Province, 11 May 1898.

[2]See The Vancouver Province, 11 May 1898, and The Ottawa Evening Citizen, 11 May 1898.

[3]R. C. Featherstonhaugh, The Royal Canadian Regiment, 1883-1933 (Montreal: Gazette Printing Company, 1936), p. 67.

ment could hardly have gone hat in hand to Washington and ask that Canadian troops be permitted to cross Alaska on their way to the Yukon. Thus the Yukon Field Force was to be subjected to the rigours and difficulties of the Wragnel-Telegraph Creek-Teslin route: the Stikine Trail.

In point of fact, the so called all-Canadian route was not all Canadian at all, as it was necessary to pass through American territorial waters in the Alaskan Panhandle and also to tranship from ocean going steamer to riverboat at the American port of Wragnel. The best that could be said for the route was that it was less American than the alternatives. No difficulties were encountered in the United States territory. The weapons and supplies of the troops cleared US Customs in bond and the troops of the American Army garrison at Wragnel welcomed their Canadian counterparts in the community during the two days it took to transfer the Force's supplies to a pair of river boats.[1]

The river voyage to Glenora was accomplished with no more than the usual number of mishaps, groundings, and mechanical breakdowns. At Glenora, the Force began an intensive training period designed to accustom the troops to the rigours of marching over what passed as a trail in the vastness of the North. There was no railroad from Telegraph Creek to the head of navigation at Teslin. The great railroad project had foundered in the Senate where the Conservative majority would have nothing to do with what was considered an excessive land grant accompanying the contract. The troops, like the rest of the hapless gold seekers using the route, would have to walk.

The rigours of the Stikine Trail, and indeed all of the routes to the Klondike, have been well chronicled. The troops of the Yukon Field

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[1] Ibid., p. 230.

Force suffered no more and probably a good deal less than their fellow civilian trekkers. Pierre Berton paints a picture of the conditions on the trail:

> (A) wagon road was supposed to lead overland to Teslin Lake, one hundred and fifty-six miles distant, but the road was largely non-existent . . . . The route to Teslin became black with people and animals of all description . . . piles of useless equipments strewn along the wayside sacks of sugar, discarded clothing, the wreckage of broken sleds.[1]

The presence of the Yukon Field Force was also noted:

> . . . (A)nd in the midst of all this hurlyburly, the most outlandish sight of all: two hundred and three uniformed soldiers in scarlet jackets and white helmets marching as best they could in close order . . . trudging in step through the mudholes and over rocks and stumps, performing barrack-square evolutions, spearing fish with their bayonets, and dragging their Maxim guns along with them.[2]

In retrospect, the march to Teslin was a significant accomplishment for the Force. No casualties were sustained and the main body arrived in that small community by mid August. In his Report for the year, the Major General commanding the Canadian Militia, E. T. H. Hutton, wrote:

> The march of the force across an hitherto but little known and very difficult country was conducted with judgement and skill on the part of the officer in command.
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> The difficulties encountered were not unlike those experienced by the Red River Expedition in 1870. It may fairly be said that

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[1] Berton, p. 230.

[2] Ibid. Berton exaggerates in some respects here. There is no evidence that the troops attempted to march in formation or to keep step as they struggled along the trail; nor did they wear dress uniform. At evening bivouac sites, however, drill periods were regular features of the Force's daily routine. Parade square drill in the middle of the wilderness may seem ludicrous today, but the notion was in keeping with turn of the century ideas of military discipline and how best to maintain it. The officers of the Force justified the drill sessions on the grounds that it helped to remind the troops that they were part of an organized military force and not members of the rabble that surrounded them. See Featherstonhaugh, p. 70. Documents held in the Public Archives of Canada do not record what the troops thought of it all.

> this small force of Canadian troops has well sustained the reputation of British soldiers for perseverance, persistence of purpose, endurance and discipline under trying circumstances.[1]

On 11 September, the Force reached Fort Selkirk, a former Hudson's Bay Company post. Selkirk had been selected by an optimistic government as the future administrative center of the Yukon because it was centrally located in the region and was not plagued by the swampy conditions of low-lying Dawson. Accordingly, Evans had been ordered to establish his main base at that site. An advanced party of artisans and skilled axemen had preceded the main body, and work was well advanced on the construction of the barracks and the associated buildings. The epic journey--by rail, steamship, river boat, foot and scow--was over. The Yukon Field Force had arrived in its theatre of operations.

In Dawson, there was some question as to whether the Force was needed. The editor of The Klondike Nugget, which began publication in June, had commented in July on the "police reinforcements" who were rumoured to be on their way. The story had become somewhat warped in transmission and the members of the Yukon Field Force were identified as "a body of two hundred and fifty Winnipeg special policemen".[2] In any case, the editor observed that the great rush of people that the Dominion government had envisioned had not really materialized. As a result,

> that number will be superfluous. The present force is ample and is effectually and satisfactorily policing the district without any addition to their number.[3]

The opinions of the local journalist to the contrary, however, upon the Force's arrival in Selkirk, Superintendent S. B. Steele of the

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[1] Militia Report, 1898, p. 25.

[2] The (Dawson) Klondike Nugget, 12 July 1898.

[3] Ibid.

Mounted Police in Dawson immediately applied to the Yukon Commissioner to have fifty men deployed to Dawson to supplement the police. Again, the law and order issue was paramount, as Steele felt that there were not sufficient police available in the gold field area to respond to possible emergencies. By December, 1898, the strength of the Dawson detachment had been increased to two officers and seventy other ranks.[1]

While the first winter for the Force in the North passed, thoughtful people in Ottawa began to consider the Force and ask questions as to precisely what the troops did. An inquiry by the Minister to Militia Headquarters concerning the exact nature of the troops' duties must have caused some embarrassment to the senior staff officers there. They were forced to admit that they were not really sure just what two hundred of their men were doing, but it was allowed that they would ask the commander.

Colonel Evans replied to the query at some length on 1 August, 1899. At Fort Selkirk, he reported, there was a barrack guard of five men and a regimental fire piquet of four. Aside from these regular duties the troops were occupied in "routine garrison drills and duties". At Dawson, the list of responsibilities of the Force was somewhat more impressive. The troops mounted guard on a regular basis on the office and residence of the Commissioner of the Yukon Territory and a guard was mounted during the evening hours on the three banks of the community. The Dawson detachment also provided escorts for civil prisoners when the latter were engaged on labour projects. In addition, a section was employed two or three times a month in escorting the gold shipments that came in from the diggings on the creeks to the city banks.[2]

It is obvious that the Force was making itself useful by acting

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[1]PAC, RG 9, II A1, folio 17743. [2]Ibid.

as a form of police auxilliary. In addition, as the Klondike Nugget noted, their presence was most welcome whenever Dawson suffered one of the periodic fires that devastated the town. It is equally obvious that the anticipated crisis that prompted the Force's deployment in the first place had not emerged.

Whether or not the presence of the troops contributed significantly to the continued peace cannot be determined. By the summer of 1899, the rush was over and the population of Dawson was rapidly dwindling. The North West Mounted Police had been established in the community from the very beginning and had never lost control. In retrospect, Dawson was a very peaceful city, particularly in comparison to American frontier mining communities of the nineteenth century.

Pressure began to mount to withdraw the Force, and this pressure came from both within the military establishment itself and from the ranks of the opposition in the House of Commons. As early as the winter of 1898, General Hutton wanted his troops back. Hutton, a British officer, had been seconded by the War Office to Canada and came to the Dominion dedicated to the concept of imperial defence and the development of a militia army. There were several much needed reforms that he wanted to institute in the Active Militia, and to carry out these reforms, he required the services of the troops of the Permanent Force stationed in the Yukon. As he noted in his annual Report,

> With reduced number of Permanent troops now available, it is found to be impossible to satisfactorily carry out the instructional system for officers and N.C. officers of the Active Militia at the various Schools of Instruction. It is even difficult to carry out the ordinary routine duties appertaining to troops in barracks. I have already represented that officers and men at the various schools of instruction are overworked.[1]

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[1] Militia Report, 1898, pp. 36-37.

Hutton wanted the troops to be withdrawn in the summer of 1899. Failing that, he recommended that the establishment of the Permanent Force be increased to offset the loss of men to the Yukon. He noted that the 203 soldiers of the Permanent Force serving in the North amounted to 24.4 per cent of the regular army of Canada.[1]

The eventual result was a compromise. A portion of the Force was withdrawn, including the commander, who was slated to go to South Africa as part of the Canadian contingent serving there. The 88 soldiers who remained, now styled "The Yukon Garrison", abandoned Fort Selkirk and established themselves in Dawson City.[2]

In the House of Commons, an opposition member accused the government of wasting money on the Force, claiming that the Yukon was perfectly peaceful and the Mounted Police who were on the scene at the time of the rush would have been adequate to control the situation. Frederick Borden replied that the increase in the police establishment and the raising of the Yukon Field Force was a precautionary measure based upon the anticipated influx of people into the territory. He went on to produce a fine argument for the value of military presence and the deterrent and stabilizing effect a garrison has on the population:

> . . . (I)n mining communities such as that in the Yukon, there is always danger to peace and order . . . as the presence of a force amongst the population . . . will serve to preserve order . . . . It is altogether unjustifiable . . . to attempt to argue that because that force has not been actually called out to use its firearms, it, therefore, is unnecessary. It is true there has been good order in that country, but there has been good order because the Government had taken the precaution of sending the Mounted Police there and sending the militia there to see good order was preserved.[3]

The difficulty inherent in such a proposition is that it is impossible

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[1] Ibid. [2] Ibid., 1899, pp. 18-19.

[3] Debates, pp. 6321-6322.

to prove one way or the other. Prudence dictates that it is better to react on the side of strength.

The winter of 1899 passed for the Yukon Garrison much as had the previous year. The rush was clearly over and former citizens of Dawson continued to leave. The days of the Force were numbered, for the requirement for the troops' presence had now passed. In his year-end Report, the General Officer Commanding the Militia noted that a decision on the Force would be required early in 1900. By May the period of service of the volunteers would have expired and it would be necessary either to replace the troops or to renew their terms of service if it were decided to retain the garrison.[1]

In March, Sir Charles Tupper, the Leader of the Opposition, again brought up the issue of the troops in the Yukon. In view of the drastically decreased population of the territory and the continued presence of the Mounted Police, he called for the withdrawal of the remainder of the Force, on the grounds that it represented a needless expenditure of public monies. He maintained that as events had turned out, there never was any need to dispatch the Force in the first place for, "the Yukon has been one of the most orderly places in the Dominion".[2] The Prime Minister replied, repeating the argument that the reason for the tranquility of the area even at the height of the gold rush was, "largely due to the care taken by the government to provide such a police and military force as to check the possibility of any demonstration . . .". He did agree, however, that the reports of the Force at the end of the winter season would be carefully studied and that there was the possibility that the government would decide on the withdrawal of the Force.[3]

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[1] Militia Report, 1898, p. 19.

[2] Debates, 1900, p. 1209. [3] Ibid., pp. 1210-1211.

The Cabinet considered the situation in May. A report submitted by the Minister of Militia and Defence noted that if a garrison were to be maintained in the Yukon, it would have to be kept at the present strength of about 88 to be efficient. He further noted that few, if any, of the members of the Permanent Force volunteers then serving in the Yukon intended to re-engage for a further period of service in the North and hence the government would be faced with the expense of dispatching replacements the coming summer. In any case, the minister admitted that there was no longer any justification for keeping the Force in the Yukon as the situation had stabilized completely. The government resolved to withdraw the troops on the opening of navigation in the summer of 1900. The men were needed elsewhere to meet the Canadian commitment to South Africa and the new requirement to garrison the former imperial naval fortress at Halifax.

Upon receipt of the withdrawal order, the Yukon Garrison quickly made the necessary preparations. Rifles and ammunition were left in Dawson under the care of the police, available for issue should any unanticipated emergency arise. In July, 1900, the Yukon Field Force was no more.[1] In recognition of their services, the General Officer Commanding the Militia commented: "A soldier-like spirit and zealous attention to duty characterized all ranks of this Force during its two years service in the Yukon."[2]

For a few years an Active Militia Company existed in the Klondike. The Dawson Rifle Company with an established strength of 45 all ranks was authorized on 1 July, 1900. The unit paraded regularly in mufti until the following year when uniforms, arms, and ammunition were received from

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[1]PAC, RG 9, II A1, folio 18637.

[2]Militia Report, 1900, p. 43.

Ottawa. The organization existed for five years, during which time it acted much like any other Active Militia unit.[1] The continuing fall of Dawson's population resulted in the disbandment of the unit in November, 1905.[2]

In this manner, the Canadian military vanished from the North. The Yukon Field Force must be looked on as an aberration in the development of the Canadian military establishment. The military presence in the North was as ephemeral as the event which had prompted it. The townsite at Fort Selkirk was never built and the Field Force barracks slowly crumbled into decay eventually to vanish beneath encroaching vegetation. With the gold rush over, there was no military interest in the North and precious little governmental interest. In the realm of defence, interest continued to focus on the reform of the Militia, in the developing concept of imperial defence and the role Canada was to play in the Empire of which she was a part. For many years, the only uniforms to be seen in the North were those of the Royal North West Mounted Police. A pattern of sporadic military involvement in the North had begun. None of the soldiers who had served in the Yukon ever returned. What experience they had gained was quickly lost to the Militia.

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[1]Canada, Department of National Defence, Directorate of History (henceforth: D Hist), folio 5001009(D7), "Lieut Col. H. D. Hulme Tells of Early Days of Rifle Company", newspaper (unidentified) clipping. The author of the article was the first commanding officer of the Dawson Rifle Company.

[2]Cited in Pye, p. 34.

CHAPTER III

HIATUS

The Empty Years: 1900-1922

There is an historic Canadian tendency to be concerned with the North only during times of crisis or periods of economic prosperity. At the turn of the century, the Klondike crisis had passed, but a booming economy allowed Laurier's Liberals to turn some of their attention to the North. In the few years that remained before the outbreak of war, Canada made some progress towards exerting national authority in the Arctic. A series of flag showing, proclamation issuing, cairn building expeditions was sent into the Eastern Arctic. These voyages also acted as bases for scientific study, customs collection, and fishery control. RNWMP detachments were established along the western shore of Hudson Bay and on the Beaufort Sea. A study was commissioned to investigate the strength and validity of Canadian claims to the territories and waters of the Arctic. Legislation was enacted organizing the arctic territories for administrative purposes. In the Senate, Senator Pascal Poirier proposed that Canada declare sovereignty over all lands lying between her eastern and western borders from the mainland to the pole. The resolution, which came to be known as an expression of "The Sector Principle", was in time to become an important issue in northern sovereignty.[1]

A number of factors precipitated this sudden flurry of interest. Probably the most important of these was the concern over arctic sover-

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[1]Zaslow, pp. 249-268.

eignty. It was appreciated by a few thoughtful politicians, civil servants, and private citizens that unless Canada showed some interest in the Arctic, and took at least some symbolic actions to demonstrate her authority, whatever legal claims the country had to the territory might slip away in the face of occupation and development of the region by citizens of other nations.

It was clear that despite what Canada and Great Britain might claim, foreign nationals operating in the High Arctic around the turn of the century regarded the area as no man's land. They had little reason to think otherwise, for aside from a government-sponsored expedition in the mid-1880s to investigate shipping possibilities in the Hudson Straits area, agents of the Canadian government had never been into the Arctic. American whalers occupied semi-permanent base camps in the Eastern Arctic, where they carried out an increasingly profitable fur and ivory trade as a subsidiary activity. They also penetrated into the Beaufort Sea in the Western Arctic, established prosperous fishery, and (if one could believe contemporary Canadian newspaper accounts) debauched the local Eskimos. Robert Peary's polar expeditions of 1898, 1905, and 1908 were carried out with a cavalier disregard for the environment, the native peoples, and the sensibilities of Canada. Peary's expeditions were all supplied with a generous quantity of Stars and Stripes which he did not hesitate to plant along his routes.[1] To the west of Ellesmere Island, the Norwegian explorer, Otto Sverdrup, and his partners were carrying out important geographical and scientific work, discovering in the process some hitherto unknown islands. This particular expedition was in time to raise some delicate questions of Canadian sovereignty. While Britain had ceded to

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[1]Philips, p. 101.

Canada all the islands between the mainland and the pole, the question arose over the international validity of the scope of the bequest: could one nation cede to another something that the donor did not even know it owned.

Much of the government sponsored activity in the 1897-1914 period was designed either to control the above mentioned ventures or to act as a Canadian counterpoise to the international implications of such foreign activity. There were, however, other reasons for the Canadian programs. As a sovereign state it was the right of Canada to levy customs duties on trade being conducted in her territory. Similarly, it was her right to demand that whalers operating in Canadian waters take out the appropriate licences. While this aspect had strong overtones of maintenance of sovereignty, there was also the simple fact that the country was losing revenue because she had no means either of enforcing the regulations or even of collecting the money. Another not to be neglected factor was that several departments of the federal government had an interest in the North as a direct extension of their regular responsibilities. The Geological Survey Branch in particular wanted more basic data about all aspects of the North. Economically, there was increasing interest in a possible Hudson Bay shipping route for rapidly expanding wheat exports. Before regular shipping schedules could be established, however, it was realized that much basic data on ice conditions in the Bay and the Straits would have to be collected. In all, several departments of the federal government became involved in research and exploration activities in the Arctic during this period. The Department of Militia and Defence was conspicuous by its absence.

By no stretch of the imagination was the North at the turn of the century and in the first two decades beyond, a potential battle area or

invasion route. Isolation, distance, and climate all combined to secure Canada's North. What little local shipping there was did not represent a worthwhile target for anti-shipping operations. There were no strategic targets in the North. Aviation, still in its infancy, had not developed the necessary technology to permit trans-polar flights.

In 1903, in response to public pressure to dispatch an arctic patrol to reinforce Canadian sovereign claims, most other nations would have sent a gunboat--or a cruiser! The significance and utility of naval units "showing the flag" was well understood in the western world. The option was not even considered, for Canada still had no navy. In the same vein, there was a clear need to deploy agents of the federal government to occupy land and enforce the laws of Canada in the Arctic, the government turned instinctively to the Mounted Police. There was no consideration whatsoever of using troops, despite the fact that the Mounted Police were fully occupied with their responsibilities in the Yukon. Canada simply marked time in the Arctic, doing the absolute minimum required to reserve her claim to the far northern lands against the day when they might prove to have some utility to the nation.

It was a two way street. Political leaders never thought of the Militia, and Militia leaders certainly never suggested military involvement in the North. A mere two hundred men dispatched to the Yukon had seriously disrupted the Permanent Force. Canada's General Officers Commanding the Militia and later, Chiefs of Staff were not about to suggest a further commitment for their tiny force. Internal reform, training, and imperial defence--these issues and these alone occupied the attention of military leaders. Not only was a potential not utilized, it was not even realized that it existed. The annual Reports of the Department of Militia and Defence from 1901 to 1922 make not one single reference

to the North.

In the pre-war years, what Canada did, albeit slowly, and with no great sense of urgency, was build a Militia Army along the lines that General Hutton had envisioned. Beginnings were made on the establishment of the various support arms and services that a modern field army required. Militia staff courses and staff rides were undertaken with a view to increasing the technical competence of Canada's part-time soldiers. A mobilization plan was drafted. The size of the force continued to grow. In the summer of 1914, over 50,000 volunteers attended the annual training period; the Permanent Force approached 3,000 all ranks.[1]

Canada also laid down the beginnings of a navy. The early history of the Royal Canadian Navy was by no means smooth. There was fundamental disagreement within the country as to the purpose, role, and, most importantly, the relationship that Canada's maritime force should have with the Royal Navy. The eventual decision was that Canada should have her own navy which would come under the higher command of the Admiralty during time of war. In August, 1914 Canada's navy consisted of two aged ex-Royal Navy cruisers, one on each coast.

There was no air force, nor were there any military aircraft.

In view of the eventual course of the First World War; it is manifestly obvious that Canada was in no way even vaguely prepared for the scale of conflict that developed. In this respect she was not alone. No nation had even begun to appreciate the implications of total war or the vast technological superiority that the defence had over the offence.

Canada's war effort can be seen as a national spasm. The Canadian

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[1]See K. C. Eyre, "Staff and Command in the Canadian Corps" (Unpublished MA Thesis, Duke University, 1967).

contribution was out of proportion to the pre-war military capability, and in many ways, was out of proportion to the size of the Dominion. It is clear now that Canada went to war with a good deal of enthusiasm and patriotic fervour. Many of those who volunteered during the hot days of August did so with the nagging fear that the was would be over before they got to Europe. They need not have worried. Three years later, a reluctant government was forced to begin conscription to keep the deployed forces up to strength.

The bulk of these forces were embodied in the Canadian Expeditionary Force, the teeth of which was, by 1917, a large, powerful four-division corps fighting on the Western Front.[1]

The Royal Canadian Navy virtually withered on the vine during the war years. Canada ended the conflict with a handful of trawlers and drifters engaged in coastal patrol work. The two old cruisers had long since been laid up. Those Canadians who wished to serve at sea joined the Royal Navy.

Canada made no serious attempt to develop her own air force during the war. Those Canadians with a bent for aviation served in the Royal Flying Corps and later, in the Royal Air Force. Their numbers and their accomplishments were not insignificant. By the war's end, it has been estimated that fully 25 per cent of the air crews of the RAF were of Canadian origin.

The war in Europe dominated Canada. For four years, the nation looked east. The North was forgotten--with one exception. In 1913, the Conservative administration of Robert Laird Borden sponsored an expedition of exploration and scientific research into the Western Arctic. Under

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[1]See John Swettenham, To Seize the Victory The Canadian Corps in World War I (Toronto: The Ryerson Press, 1965).

Vilhalmir Steffanson, a portion of the Canadian Arctic Expedition remained in the field throughout the war. With the exception of this handful of men, the Arctic was devoid of federal government representation.

With the Armistice, Canada quickly divested herself of the trappings of war. The mighty Canadian Expeditionary Force vanished almost overnight. The country lapsed into its traditional defence posture, a voluntary militia supported by a small Permanent Force of professional soldiers. Miniscule naval and air forces were also retained.

In the immediate post-war years, the federal government perceived an imperative to respond to the twin demands of sovereignty and national development in the North. With respect to the former, neither the government nor the defence establishment anticipated any role for the military, although inherent in the situation were certain possibilities that were ignored by both. In the field of national development, however, two of the war-inspired technologies, aviation and wireless communications, were seen to have tremendous importance for the future development of the North. The Canadian military establishment was uniquely qualified to make significant contributions in both areas.

CHAPTER IV

NATION BUILDING I:

The Interwar Years 1922-1939

The 1922 Eastern Arctic Expedition

Soon after the end of the Great War, Canadian attention again turned to the unresolved issue of sovereignty over the islands of the Eastern Arctic. There had been no official Canadian presence in the area since the visit in 1910 of Captain J. E. Bernier on the third of his pre-war patrols in the Coast Guard Ship Arctic. This was despite the fact that in 1904 the Dominion Astronomer, Dr. W. F. King, on completion of his commissioned study of the problem of sovereignty in the Arctic, had concluded that Canada's claim was in many ways imperfect. In addition there were strong rumours circulating in Ottawa that other nations were preparing to occupy sites in the "Canadian North". The Danes, long established in Greenland, were reportedly planning an expedition to Ellesmere Island, an area they regarded as unclaimed. The Norwegians had an historic but undeveloped claim to the islands west of Ellesmere, thanks to the explorations and discoveries of Otto Sverdrup in 1903-1905. American sponsored explorations were apparently in the offing and it was reported that a recently published American atlas showed Ellesmere in the same colour as Alaska--an ominous sign to concerned Canadians.

In response to these perceived threats, the Department of the Interior formed the Advisory Technical Board, in 1919. It consisted of a small group of senior civil servants under the chairmanship of the

Surveyor General, Dr. Edouard Deville. The Board's mandate was twofold: to determine whether or not the Canadian title to the arctic islands was worth developing; and, if so, to recommend what steps should be taken to establish such a title. The focus of the study was on the islands of the Eastern Arctic, but in some respects it touched on factors affecting the entire archipelago.

Neither the potential value nor the importance of the islands was generally perceived in the Dominion. Still, the Board found many compelling reasons for Canada to perfect her claim to the region:

> Ellesmere and the other northern islands have always been regarded in Canada as Canadian, and there doubtless would be strong sentiment against their being taken possession of by any other flag.[1]

It is probable that the emotional and nationalistic nature of the issue would in itself have been strong enough to cause the Board to recommend development of the Canadian claim.

In any case, the Board produced several other reasons that were both perceptive and far-sighted. They noted the role the islands might play in civil and military aviation. Dealing with national security, they broached a subject that was to beguile and haunt defence planners in the late 1940s and early 1950s. As the Board saw it, "It would be undesirable and dangerous to allow another nation to get a foothold in the north now that aerial navigation has become so far advanced". Nor was the significance of the Alaska precedent lost on the Board members. They were well aware that the unknown land that had been dubbed "Seward's Folly" at the

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[1]Canada, Department of the Interior, Report by the Sub-Committee of the Advisory Technical Board (henceforth ATB Report), (n.d. 1919?). There are apparently several drafts of this report extending well into 1920. The one referred to here is probably the first draft. It was submitted to the Commissioner of the RCMP in January 1920. The report is held in RCMP, Historical Section, File G-516-37, Sovereignty over Islands Lying North of the Mainland of Canada (henceforth RCMP Northern Sovereignty), Vol. 2.

time of purchase not only turned out to be a literal gold mine but also eventually yielded substantial other resources. It was anticipated that the Arctic Archipelago might well contain vast reserves of mineral wealth. There was even at that early date the suspicion voiced that oil might be discovered in the more westerly islands. Clearly, for a wide variety of reasons, the Board thought that it was in Canada's immediate interest to develop her sovereign claim.

Of the various methods by which a state can acquire territory within the established conventions of international law, occupation was seen by the Board as most appropriate to the case of the islands of the Eastern Arctic. Occupation required more than just a symbolic act such as the hoisting of a flag. A real claim to sovereignty, through occupation, had to be based upon a physical presence and the establishment of government administration in the area.[1] Obviously, some agents of the Canadian government were going to have to go north.

The Board was quite definite as to who these agents ought to be: sovereignty in the Eastern Arctic was to be established by the Royal Canadian Mounted Police. The men of the Force had already established a presence in the Yukon, the Mackenzie, and along the fringes of Hudson Bay. It seemed natural that now they should be sent farther afield. The Board does not appear even to have considered such alternatives as a military garrison or a civil agency of the Department of the Interior.

The Report produced by the Advisory Technical Board became the key planning document for subsequent Canadian occupation of the Eastern Arctic. Virtually all its recommended programs and approaches were eventually implemented. The one area where the opinion of the Board differed from

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[1] Ibid.

that of the Cabinet was the need for haste. The bureaucrats thought that immediate action was imperative; the politicians perceived no such pressure.

The members of the Board were concerned with the need "to get there first", but by the time the Report had been fully considered in the Department and the Cabinet, it was mid-1920 and the summer shipping season was too far advanced for Canada to do anything concrete that year. It was the potential Danish "threat" to Ellesmere Island that most concerned the Department of the Interior. The Board went so far as to outline a tentative plan to be used if definite evidence became available that the Danish government was going to support an expedition in 1920. They recommended that Canada should attempt to borrow an airship from the imperial government. This airship was to be loaded with a group of RCMP constables and a winter's worth of supplies, and launched from Scotland towards the Pole. Over Ellesmere, the police were to parachute onto the island in time to greet the Danes.[1] Given the state of the art of arctic aerial navigation and parachuting technology, it is fortunate for the police that there never was a need to implement this hare-brained preemptive scheme.

At first glance, it would seem that it would have been reasonable to turn to the Department of Militia and Defence for the men for this contingency plan. "Airborne operations", as the mass parachuting of troops was to become known in the next war, were still a phenomenon of the future. Parachuting in the early 1920s was still very much a fairground display stunt or, increasingly, a lifesaving means for aviators. The link between

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[1] In point of fact the Danish government was quite helpful to Canada when the expedition was actually launched, and continued to provide assistance during the period 1922-25. See RCMP Northern Sovereignty, Vols. 2, 3.

parachuting and the military had yet to be formed.[1]

In another sense, this minor plan is illustrative of the manner in which the defence establishment was regarded in Canada. There is no evidence that the Department of the Interior ever even considered consultation with the Department of Militia and Defence on any aspect of the problem. On the other hand, it is unlikely that the military would have had the slightest interest in the project had they been approached. Canadian attitudes were very fixed. The business of the military establishment was the defence of the country and the support of the forces of law and order. The protection of sovereignty was the responsibility of the RCMP. There is no evidence whatsoever that anybody--politician, civil servant, professional soldier, or private citizen--at the time considered that the military had or could have a role to play in the establishment and protection of sovereignty.

The Danes did nothing in 1920, and Canada was able to proceed at a leisurely pace with the planning and the preparations for an expedition in 1921. A wooden hulled sailing ship, the Arctic, was procured for the expedition, and a massive refit was begun. Her former Master, Captain Joseph E. Bernier, Canada's most experienced arctic mariner, was called out of retirement. J. D. Craig of the Department of the Interior was appointed commander of the expedition, and at RCMP headquarters, staff officers began to examine the nominal roll of the Force in search of likely candidates for the northern deployment.

Then, all activity ceased; the expedition was cancelled.

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[1]Brigadier-General William Mitchell's plan to drop the 1st Division of the American Expeditionary Force behind German lines at Metz in support of the 1919 offensive had naturally not come to fruition, fortunately for the American troops as the concept was ahead of the technology required to support it.

Mackenzie King, the Leader of the Opposition, wanted to know why. Prime Minister Arthur Meighen claimed that the expedition had not actually been cancelled, but had merely been put off until the following year because of the high costs involved. The issue was pursued with the suggestion that Canada should accept the additional expense in view of the rumour that, "another power just might be contemplating the same action". The Prime Minister's disagreement with the time assessment of his civil servants was most apparent when he stated that there was really no pressing need for action, and that Canada's claims would not be harmed by waiting a year. He did assure the House, however, that if any other power made a move in the Canadian Arctic, "the Government will not hesitate to take action to protect the interests of Canada".[1] Just what that action would be and how the government would take it, the Prime Minister did not say.

The plan for the occupation of the Eastern Arctic continued to be developed and refined during the year-long lapse in activity. Government officials paid considerable attention to the notion that a claim to sovereignty based upon the fact of occupation required both physical presence and the provision of government administration. In the Canadian case, however, the occupiers and the administrators were to be one in the same: the RCMP. As W. W. Cory, the Commissioner of the North West Territories saw it,

> . . . in order to establish occupation it is necessary to perform certain administrative acts and that the Police Force should be empowered to act as Customs Officers, Immigration Officers, Postmasters, etc.[2]

It is often popularly assumed that the men of the RCMP who performed

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[1] Debates. 30 May 1921, p. 4106.

[2] RCMP Northern Sovereignty, Vol. 1, Cory to Perry (Commissioner, RCMP) 12 March 1921.

basic tasks of government administration in the early years in the High Arctic did so on an unofficial basis as and when the need arose in the areas they patrolled. In reality, it was always intended, because of the legal needs of the sovereignty claim, that such services should be provided on an official basis. The RCMP had approached all the departments concerned to have the Force's detachment commanders in the North formally appointed (without salary) to the posts of Immigration Officer, Customs-Excise Officer, Justice of the Peace, Coroner, and Postmaster.[1]

The year 1922 marked a turning point in the history of the Canadian North. The Canadian Arctic Expedition finally departed from Quebec City on 18 July. Aboard Arctic was a force of nine members of the Royal Canadian Mounted Police, commanded by Inspector C. E. Wilcox. Cargo included a two year supply of food and fuel, along with the necessary materiel to build quarters for the men who would occupy and administer the Eastern Arctic. By the end of summer, Wilcox and his men were established in the forlorn camps that were to be their homes for the next two years. The RCMP posts established at Craig Harbour on Ellesmere Island, and Pond Inlet on Baffin were the beginnings of what was to become a far flung net of police posts. The subsequent story of the RCMP presence in the High Arctic has been woven into the basic fabric of the history of the area. The summer cruise of the Arctic, and those of her successors, to resupply the police posts and to provide an ever increasing range of government services was to become an annual feature in the North. Today, in modified but recognizable form, the Eastern Arctic Patrols are still carried out.[2]

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[1] RCMP Northern Sovereignty, Vol. 1, Cory to Perry (Commissioner, RCMP) 12 March 1921.

[2] For a more detailed study and analysis of the sovereignty establishing aspects of the 1922 Expedition, see K. C. Eyre, "Policemen and Post Offices: Canadian Sovereignty 1922 Style", north nord, Vol. 23, No. 3, May/June 1976.

Symbolic acts such as the building of a cairn, the reading of a proclamation, or the hoisting of a flag were deemed by international convention to be inadequate to support a claim to sovereignty. Canada's response was to provide a symbolic presence and a symbolic administration. It mattered not that it was extremely unlikely that anybody would actually require the services provided by the police detachments. The presence of the police detachments in the North was seen from Ottawa to "close up what might be called the front door of the Arctic Archipelago".[1]

In addition to the members of the RCMP and several representatives of the Department of the Interior, Squadron Leader Robert A. Logan of the Canadian Air Force sailed with the 1922 Eastern Arctic Expedition. In doing so he became the first member of the Canadian military establishment ever to serve in the Arctic. The Advisory Technical Board had sensed that the war-inspired technology of aviation, and the promise of extensive further development, would have an important significance to the Canadian North. Logan was ordered, at the last minute, to join the expedition, the Department of the Interior having approached the Air Board to supply such a specialist. His task was

> to endeavour to obtain as much information as possible regarding flying conditions (in the Arctic Archipelago), and from investigations made actually in the country concerned to submit suggestions which might be of assistance in determining the types of aircraft suitable for use and methods for their employment in various ways in the northern Archipelago.[2]

Logan's report naturally reflects his personal background and the organizational environment of which he was a part. As a member of the military establishment, he looked at the Arctic Archipelago from the point

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[1] ATB Report.

[2] R. A. Logan, Report of Investigations on Aviation in the Arctic Archipelago carried out during the summer of 1922 (henceforth: Logan Report) held in Canada, Department of National Defence, Directorate of History (henceforth D Hist), (74/414).

of view of a defence strategist. He also assumed that pioneering aviation enterprises in the North would, of necessity, be carried out under government sponsorship and that the Canadian Air Force would be the agency that carried out the actual work involved. In reality, this latter aspect does not mean, as it appears to, that Logan saw the Air Force specifically as having an important role to play in the opening up of the North. Rather it reflects the primitive state of the organization of aviation in Canada at the time. In 1922, the Mackenzie King administration was in the process of merging civil and military aviation under a single Director of the Canadian Air Force within the Department of National Defence. While it was possible to distinguish between flying done as purely military training and flying done "in support of other government departments", all the actual work was done by the same group of people using the same group of aircraft. Logan was selected by the Air Board in his capacity as an expert on aviation, not in his capacity as an officer of one of the three fighting services.

The Logan Report is an important historic document for it contains the first suggestion that the Far North had an important strategic role to play in the defence of Canada. In many respects, Logan's thoughts were a generation ahead of their time. Given what are now understood to be realities, his thoughts on the strategic importance of the North would have been much more appropriate to 1952 rather than 1922, for Logan correctly anticipated the developing technology of aviation and even the potential enemy.

Logan built an analytic model which depicted four classes of global aviation. The last two classes, which included sub Arctic and Arctic flying, he maintained, would require special equipment, skills, and support facilities. On the grounds of defence alone, he urged that Canada should take the necessary steps to master northern flying. The opinion that it

would be necessary to develop such an obviously costly capability reflected Logan's adherence to the then current western democracies' concern with international communism in general, and the success of the Bolsheviks in Russia in particular:

> Much has been said of the possibilities of future hordes of Slavs overrunning Europe . . . Aircraft operated from Arctic or sub-Arctic bases which would swoop down and leave trails of destruction throughout the rest of the world, but from the very nature of their bases of operation they would be almost inaccessible to aircraft of countries to which "cold weather" flying was unfamiliar.[1]

Logan clearly saw it as a Canadian responsibility to develop the ability to deal with any northern threat. He wrote:

> Whether war with such a country as Russia would ever come or not, should not affect the determination to develop flying in the Canadian Arctic and sub-Arctic regions because Canada, if it considers itself worthy to be called a Nation, should have enough pride and spirit to take at least ordinary precautions and be prepared to defend itself in any emergency.
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> . . . It now remains for (Canada) to show the rest of the world that she can defend herself, and the whole British Empire if necessary, from all comers from the cold countries in the north of Asia--or Europe--by having men trained and proper materiel and information available through actual practice within her own boundaries.[2]

This particular notion was strikingly out of accord with the then-current Canadian political and public mood. Canadians as a whole were war-weary, anti-military, and certainly not about to spend a single cent for defence from some prospective enemy in the far distant future. In point of fact, Canada, led by Mackenzie King, was disinclined to spend much money on defending Canada, let alone the entire British Empire.[3]

Logan was shrewd enough to realize this and he showed a fine grasp of Canadian political and economic reality when he wrote:

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[1] Ibid., p. 2. [2] Ibid., p. 3.

[3] See the chapter entitled "Views from a Fire-Proof House" in James Eayrs, In Defence of Canada, Vol. 1, From the Great War to the Great Depression. (Toronto: University of Toronto Press, 1965), pp. 4-25 for a comprehensive discussion of Canadian defence policy during the 1919-1935 period.

> Canada cannot afford at the present time to carry on expensive investigation and research work unless some immediate benefit is to be obtained, and it is probable that the best policy will be to encourage flying which will materially assist many civil operations, and at the same time a knowledge of aircraft operation in cold climates for defence purposes will automatically be gained.[1]

This passage expresses a philosophy essentially the same as that put forth by J. A. Wilson, the Naval Director of Stores, who in April 1919 proposed the establishment of a Canadian Air Board:

> The upkeep of large Air Force establishments for purely Naval and Military duties in time of Peace will be expensive and a constant object of criticism. It should therefore be advantageous to the country generally to encourage and assist the Civil development of aeronautics in every way, and to so guide and regulate its organisation and any aircraft industry which may develop in Canada, so that it may form a reservoir on which to draw in any emergency.[2]

It was perceived in Canada that unlike the other armed services, military aviation could be adapted to fulfill a wide range of civil support functions in peacetime. Logan experienced no apparent difficulty in identifying several useful tasks to which aircraft could be put in the developing North. He realized that airplanes were the ideal means for "the exploration and investigation of the extent of the natural resources of the territory". He noted that the work of the Royal Canadian Mounted Police, both in respect of their civil tasks in support of sovereignty and in the more fundamental task (for them) of the administration of law and order, would be greatly facilitated by the use of aircraft. In anticipation of the development of a major caribou and musk-ox herding industry, he pointed out that aircraft would be the ideal means to identify existing and potential breeding and feeding grounds. It is evident from the tenor of his writings that Logan was anticipating a tremendous boom of development and exploitation throughout the North. The domesticated caribou and

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[1] Logan Report, p. 37.

[2] Cited in Eayrs, Vol. 1, p. 188.

and musk-ox herds, as he saw it, would provide a ready and economical source of food for workers "if a mineral or oil strike were ever made in the Arctic Islands, or even in the sub-Arctic."[1]

Logan was generally correct in his assessment of the direction of northern development; he was wrong in his sense of the tempo of that development. What he saw as taking place in the immediate future has taken, in fact, over five decades and the process is still far from complete. But who, in 1922, could have forecast the Great Depression and another world war? What is important about Logan's work, however, is his realization that before development could take place, a considerable amount of ground-work--experimentation and investigation--had to be done. He realized that development would be greatly facilitated if there were a modern communications and air transportation infrastructure established. He saw the Canadian Air Force as being the agent of the establishment of the Arctic air routes. Canada, on the whole, was not ready to get into the business of Arctic flying. The Arctic air exploration role that Logan envisioned for the Canadian Air Force did not even begin to develop seriously until after the end of the Second World War.

The 1927-1928 Hudson Strait Expedition

The vision of a seaport on the south of Hudson Bay, linking the Canadian West to the grain markets of Britain, was as old as the Dominion. The vision of a Hudson Bay port had endured since the early seventeenth century. It was a vision that was to take considerable time to be realized. As has been repeatedly noted already in this study, Canadians are not wont to look northward. To suggest that Canada should build a railroad to the margin of Hudson Bay and then, at the end of steel, to construct

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[1] Logan Report, p. 15.

AREA OF OPERATIONS
THE 1927-28 HUDSON STRAIT EXPEDITION

a port facility was an idea bound to cause incredulity in most Canadians.

Sir John A. Macdonald was confronted with the proposition, as was Sir Wilfrid Laurier a generation later. There appears to have been an almost unending series of studies undertaken in respect of the shipping season in Hudson Bay and Hudson Strait.[1] However, in the absence of a decision to open up the Hudson Bay route, the studies continued. One should not be surprised, therefore, to learn that in 1927, the Canadian government once more undertook a survey of the shipping conditions in Hudson Strait. This particular expedition is of interest to this study because it marks the first use of Canadian military aircraft in the Arctic.

In the spring of 1927, Charles A. Dunning, the Minister of Railways and Canals, announced in the House of Commons that it was the government's intention to complete the railroad "known as the Hudson Bay route". He stated that the government had considered the problem of navigation in Hudson Strait, and to this end it was proposed to send an expedition north to study the situation over a period of a year.[2] This latest survey had the same aims as all of the previous expeditions: to acquire more data

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[1]As early as 1878-1880, Dr. Robert Bell, a physician by profession and a geologist by inclination, spent two years as an agent of the Canadian Geological Survey on Hudson Bay in order to determine the length of the season of navigation and the general feasibility of the route. A perusal of two centuries' worth of Hudson's Bay Company shipping records should, one would think, have provided all the necessary data on shipping seasons and ice conditions. In 1884, the government sponsored a three year study of the meteorological conditions, tides, geology, wildlife, and native inhabitants of the Hudson Strait area. This particular expedition was led by Lt. A. R. Gordon, RN, the deputy director of the Canadian Meteorological Service. In the summer of 1897, William Wakeham, a veteran of the Gulf Fisheries Patrol, was dispatched to Hudson Bay to report on the duration of the shipping season and navigation conditions in Hudson Bay. Captain Irving B. Miles of the Department of Naval Service, while carrying out a hydrographic survey of potential port sites in 1910 also reported on the shipping conditions in the Strait and Bay. See Zaslow, pp. 255-259 and Howard A. Fleming, Canada's Arctic Outlet: A History of the Hudson Bay Railway (Berkeley: University of California Press, 1957), pp. 9, 69.

[2]Debates, 8 April 1927, p. 2146.

on the shipping season and information on required aids to navigation. An interdepartmental committee, consisting of representatives of the Departments of Railroads and Canals, Marine and Fisheries, and National Defence, was formed to work out the details of the expedition.[1] It was directed that the means of acquiring the necessary data was to be a year-long aerial survey of the area.[2] The committee proposed to establish three bases: one at either end of the Strait with a third in a central location. The government accepted this plan, and on 17 July, the 44 men of the 1927 Hudson Strait Expedition sailed from Halifax, northbound.

The Department of Marine and Fisheries, the sponsoring agency, provided general support personnel such as doctors, wireless engineers, ground radio operators, storekeepers, and cooks. The Royal Canadian Air Force provided six officers and twelve airmen to operate and maintain six Fokker Universal aircraft. The Royal Canadian Corps of Signals provided an officer and three other ranks and the necessary equipment to establish air-to-ground communications; the RCMP detailed three members for duty with the expedition.[3]

During the summer the base camp sites were selected and the necessary support facilities were installed: Wakeham Bay in the center was designated expedition headquarters; Nottingham Island in the west and Port Burwell in the east completed the line. Each base was assigned two aircraft and by mid-autumn all three sites were conducting flying operations. The open cockpit Fokkers were hardly the ideal vehicle to conduct an arctic survey despite the fact that they had been modified to permit

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[1]Canada, Privy Council Order 85, 22 January 1927.

[2]N. B. McLean, Report of the Hudson Strait Expedition 1927-28 (Ottawa: King's Printer, 1929), p. 5.

[3]Ibid., p. 7.

ski, float, or wheel operation, depending upon the prevailing climatic condition.[1] Flights were carried out "whenever the weather was favourable and it was considered advisable".[2] The work of the expedition ended in mid-August 1928. By that time one aircraft had been lost in an accident, another crashed on an administrative flight soon after and the remaining four were considered to be in no condition to fly back to southern Canada. They were dismantled and shipped home with the rest of the expedition arriving in Halifax in October 1928.[3]

The data accumulated during the flights was compiled and tabulated by the Department of National Defence and then turned over to the Department of Marine. The results of the reconnaissance patrols are interesting in many ways. Despite the fact that explorers, traders, whalers, the Royal Navy, and various other private and government sponsored expeditions had been poking around the area for nigh onto three centuries, it was found that the existing maps and charts were very inaccurate. From the bird's eye view provided by aircraft, it was soon discovered that it was impossible to identify many parts of the coastline from the maps. In addition, numerous islands were found which had not been previously charted; others, although charted, turned out to be incorrectly located.

The flights proved what many of the proponents of the Hudson Bay route had been claiming for years: even during the heart of winter, Hudson Strait never froze over completely. From ten to twenty per cent

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[1]Flt Lt E. P. Wood, Northern Skytrails: The Story of the Work of the RCAF in Canada's Arctic and Sub-Arctic (serialized in Roundel, the journal of the Royal Canadian Air Force), Part 8, pp. 20-21. Also DND Report 1929, p. 72.

[2]McLean, p. 9.

[3]Wood, Part 8, p. 22.

of the area remained open.[1] There was no practical utility in this knowledge, however, for the open lanes constantly shifted due to the action of tides, wind, and current. It was felt that any attempt to force the Strait in late winter or early spring would be exceedingly dangerous.[2]

The flight data is also interesting for it underlined the extreme difficulty of operating aircraft in the Arctic. Each base was assigned three or four routine patrols, two of which were to be carried out daily, weather permitting. The program included actually photographing the ice conditions on each patrol; those situations that permitted flying but no photography were to be covered by detailed patrol reports. In addition to the routine patrols around each base, four special patrols were laid out: aircraft from adjacent bases would fly out to a central rendezvous point and then return to their home bases. Since these special patrols took the aircraft considerably farther from their bases than did the routine patrols, they were not attempted until all six aircraft were operational and the air-to-ground radio communication system was installed and tested.[3] The aircraft flew when they could, but on numerous occasions they were "weathered in" for days on end. For example, from the start of the expedition until the end of 1927, Port Burwell was able to launch only four flights, of which only two were actual ice patrols. At Wakeham Bay eighteen flights were carried out over the same three month period, while at Nottingham Island, twenty-two flights were made. It was noted that "it has been impossible, owing to weather conditions, to carry out flying operations as freely as was expected". The problem presented by freeze-up was insurmountable for the forming ice denied the use of both floats and

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[1]McLean, pp. 12, 13.

[2]Fleming, p. 80.

[3]McLean, Appendices 3-6.

skis. Fog accounted for most of the other lost days. The flying operation was a success in the sense that no lives were lost, but on four occasions, aircraft were forced down because of inclement weather; on two of these occasions the aircraft had to be abandoned and was lost. Upon superficial examination, four forced landings over a ten-month period may appear to be a reasonable level. When one considers the actual number of hours flown, however, a different picture emerges. A total of 227 patrols were flown for a total flying time of 370 hours.[1] Using rough averaging, one out of every fifty-five patrols was forced down, or, more ominously still, there was one forced landing for every ninety hours of flying. The lack of aids to navigation, coupled with compass unreliability in the area, made Arctic flying in 1928 a hazardous occupation.[2]

Miscellaneous Air Operations

RCAF operations between 1923 and 1932 were dominated by the requirements of "civil government air operations". These air operations included forest fire patrols, reconnaissance, fisheries patrols, rust control dusting, photography, customs preventive service, treaty payment flights, air mail route finding, experimental work, aircraft testing, and

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[1] DND Report, 1929, p. 74.

[2] Norman B. McLean of the Department of Marine and Fisheries, the expedition commander, recommended in his report that safe ship navigation of the route would require stationary lights, accurate charts, reliable tidal information, and a series of radio direction finding stations. He also recommended that Canada acquire two icebreakers, one to be used in the Strait, the other to operate out of Churchill in support of commercial navigation. Radio stations were built at Cape Hopes Advance and on Nottingham Island in 1928, and on Resolution Island and at Churchill in 1929. In 1930, the icebreaker N.B. McLean began her patrol duties in Hudson Strait. For a generation, the route failed to live up to its promise. While the northerly route offered a saving of approximately a thousand miles for prairie grain over the conventional Great Lakes-St. Lawrence route to British markets, the high Lloyd's insurance rates for the Bay route, coupled with the short shipping season, virtually eliminated any cost saving. See McLean, pp. 18-22 and Fleming, pp. 89-92.

transporting government personnel. Such a huge and diverse set of responsibilities occupied a good percentage of the personnel of the RCAF. It was tasks falling under one or more of the above categories that brought the RCAF into the North between 1927 and 1932. In the latter year the effects of the depression made themselves felt. The RCAF was reduced by a third of its strength and was simply unable to meet many of these extraneous commitments. In addition, commercial firms and provincial government aviation agencies developed during the 1920s to the point where many of the former RCAF tasks could be taken over by the new organisations. After 1932, with the exception of some continued topographical work and the occasional special flight, the RCAF concentrated on training for war--and stayed in the South. In the interval, however, aircrew and ground support personnel of the RCAF gained a considerable amount of experience in operating aircraft under the varied and difficult conditions of the continental North.[1] The irony was that this experience would prove to be completely irrelevant during the war.

Most of the "civil" flying done by the RCAF in the 1920s and early 1930s was carried out in the northern reaches of the central provinces. In terms of isolation and terrain, there was little to distinguish between the boreal forest north or south of the 60th Parallel of Latitude. Aerial photography and geodetic survey work was done by No. 2 General Purpose Detachment mainly in the area between Great Slave and Great Bear Lakes, for it was in this region that mining activity centered during the 1930s. In 1934 the aerial survey was shifted to the headwaters on the South Nahanni River, the "headless valley" of northern legend. In 1935 photographic flights were launched out of Aklavik north over the Reindeer Reserve and west across the Richardson and Mackenzie mountain ranges to

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[1]Wood, Part 1, pp. 29-31.

the Porcupine River. The RCAF provided a pair of Bellanca seaplanes in 1930 for a "treaty flight" to the native bands along the western shore of Hudson Bay, and later provided lift for officers of the Royal Canadian Corps of Signals and the Department of Indian Affairs on inspection trips of government facilities in the Mackenzie Valley. Another major flight made in 1930 was the 12,000 mile operation across the barren lands made by a Vedette flying boat. The project included photographic work, inspection of northern fuel caches, and the opening up of air routes in areas that had never been visited by aircraft before. In 1936, the Department of National Defence provided a Fairchild 51 and aircrew to the RCMP for the purpose of transporting Sir James MacBrien, the Commissioner, on an inspection of prairie and northern detachments. This trip covered 11,000 miles in just under one month, one of the longest single journeys made in Canada by air at the time. In a route that described a colossal figure "8", the Fairchild ventured into the Yukon, along the Mackenzie, to the Arctic coast, into the barrens of Keewatin, and along the western shore of Hudson Bay. The entire trip was carried out without mishap.[1]

In summary, practical aviation in the Arctic Archipelago remained an unrealized dream. Flights were made all over the northern continental land mass, but the emphasis on aviation, private, commercial, and governmental, was in the Yukon and Mackenzie where economic activity in the form of mineral exploration and mining operations was concentrated. It was in these two regions that the great reputations of the "bush pilots" were made.

The Northwest Territories and Yukon Radio System (NWT & YRS)

While Canada staked her claim in the Eastern Arctic with the establishment of the remote police posts and the institution of an annual resupply cruise in northern waters, no major attempt was made to exploit the

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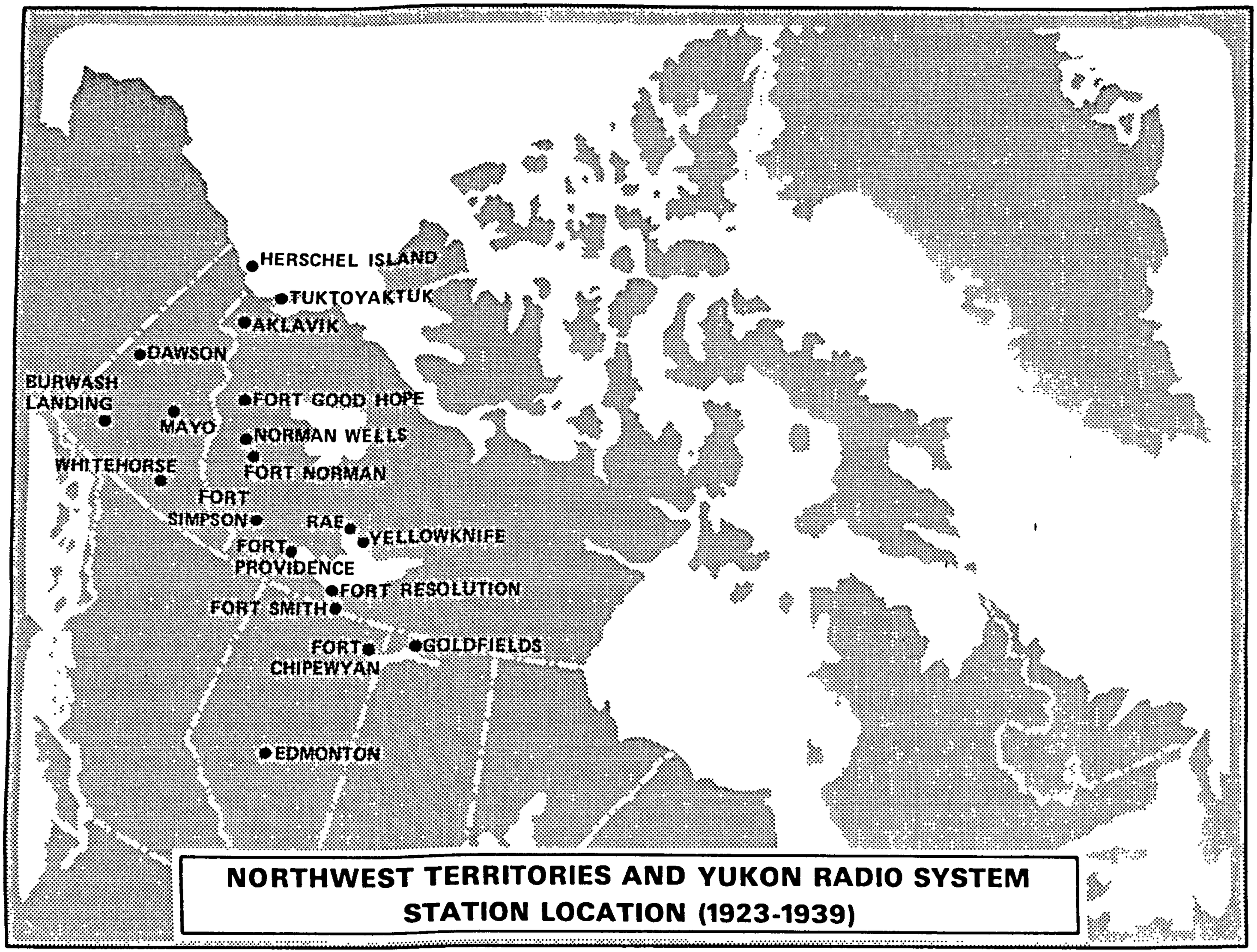
[1] Ibid., Part 5, pp. 22-26.



NORTHWEST TERRITORIES AND YUKON RADIO SYSTEM STATION LOCATION (1923-1939)

commercial potential of the area. Resource development in the interwar period was concentrated far to the west in the Yukon and Mackenzie Districts. In 1922, the communications facilities in these areas were either non-existent or else unreliable and costly. In the Mackenzie region there were no radio or telegraph facilities north of Fort McMurray, Alberta. From McMurray to Aklavik at the mouth of the Mackenzie River, a direct line distance of 1,200 miles, messages had to be carried by hand. In the Yukon there was a commercial telegraph line linking the government centre at Dawson to the national telegraph grid via a terminal at Hazleton, British Columbia. Because of the vast distances involved and the difficulty of access to the line, maintenance costs were extremely high and reliability was poor.

Some thoughtful government officials began to consider the use of wireless to bridge the North. Again the name of Robert Logan appears as one of the northern innovators. Logan had been at the Canadian Air Force's flying school at Camp Borden, Ontario and had been involved with a Royal Canadian Corps of Signals (RCCS) project of providing a wireless link between the base and headquarters in Ottawa.[1] Logan was aware of the signallers' capabilities and also knew that the senior officers of the Corps were looking for opportunities to train a cadre of experienced operators through the medium of providing wireless services to other departments of government. Following the return of the Eastern Arctic Expedition, Logan met with O. S. Finnie, the Director of the Northwest Territories Branch of the Department of the Interior to discuss the possibility of establishing a radio net in the Northwest. Logan undertook a study of the existing files on northern communications and unofficially contacted the

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[1]Letter, R. A. Logan to author, 9 July 1976 (Copy in D Hist "Logan File").

Royal Canadian Corps of Signals to determine their views on the project.[1] By the autumn of 1922 the issue had become the subject of official inter-departmental correspondence. Finnie was primarily concerned with communications in the Mackenzie Valley, but he saw the utility of an east-west link between stations to be established there and stations that could be set up in the mining district of the Yukon.[2]

G. J. Desbarrats, the Acting Deputy Minister of National Defence, replied a few weeks later outlining his department's attitude to the Department of the Interior proposal. DND was prepared to undertake the work, but insisted that the Department of the Interior provide the funding for the project, including the salaries of the soldiers who would man the stations.[3] In his view,

> Such an arrangement makes it possible to send men into these Northern areas for a certain tour of duty, and to replace them at the end of this period by other members of the Corps, thus avoiding the trouble which all commercial companies have experienced in getting operators to go to out-of-the-way places without having to pay excessive bonuses.[4]

As the Department of National Defence saw it, the main purpose of the proposed radio system was to permit various departments of the federal government to control their northern operations with a greater degree of efficiency than had hitherto been possible. The system would also handle

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[1]Letter, R. A. Logan to author, 10 July 1976 (Copy in D Hist "Logan File").

[2]Interdepartmental memorandum, O. S. Finnie to Deputy Minister of National Defence, 23 October 1922. Document held (uncatalogued) in NWT & YRS exhibit collection, RC Sigs Museum, Vimy Barracks, Kingston, Ontario.

[3]The final arrangement, however, resulted in the operating costs of the System remaining within the defence budget but as subject of a special vote. Thus the Department of National Defence differentiated between those costs incurred to train signallers for purely military purposes and those costs associated with national development tasks.

[4]Letter, Desbarrats to Finnie, 9 November 1922. RC Sigs Museum collection.

paid commercial traffic and it was thought that as northern development proceeded, the revenues thus realized might actually pay the full operating costs.[1]

With the interdepartmental agreement worked out, the matter went to the Cabinet for approval. In December, a Privy Council ruling was made to the effect that the Department of National Defence could undertake work for other departments of government in cases where commercial contract costs would be excessively high.[2]

The Royal Canadian Corps of Signals had been organized as a distinct and separate corps of the Canadian Militia in late 1918 as a result of war needs and experiences. At war's end, both the Permanent Force and the Active Militia faced a major reorganization. The requirements of the war effort and the expedients and organization adopted to meet these requirements had completely disrupted the old pre-war system. A Reorganization Committee was appointed to deal with this complex problem. Not much training or organization could take place until the plan was complete and it was not until 1923 that lines of development could be seen clearly.

Militia General Order 27 of April 1919 decreed that the RCCS slice of the planned 4,000 man Permanent Force was to be five officers and fourteen non-commissioned officers. The Militia Report for 1920 observed that the Corps was "only partially organized, and requires considerable

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[1] Ibid.

[2] John S. Moir (ed), History of the Royal Canadian Corps of Signals 1903-1961 (Ottawa: RC Sigs Corps Committee, 1962), p. 276. This condition of employing the military on national development tasks was not discussed in Parliament. The decision was probably recorded as a Cabinet Minute. The secretariat of the Privy Council was unable to locate the original note when they searched, at the author's request, in 1975.

attention if it is to be developed to the necessary degree of efficiency".[1]

The following year, the deficiencies of the establishment were spelled out in some detail:

> this establishment does not provide for even sufficient officers and instructors to supply the requirements of one quarter of the Military Districts in Canada, and does not provide for a Central Training Depot, or Permanent Army Signal School.[2]

The limited establishment was increased to ten officers and 26 other ranks later in 1921, not to meet the instructional and training requirements identified above, but to permit the provision of wireless communication for the Canadian Air Force based at Camp Borden, Ontario. The Corps was further committed to support air force forestry patrols in northern Manitoba the following summer.

The precedent established by the provision of RCCS support to the Canadian Air Force led to the realization in the Department of Militia and Defence that the potential inherent in this role had barely been tapped. The Militia Report for the fiscal year ending 31 March 1922 noted:

> A very large field exists for the employment of Signal Service personnel in connection with Federal and Provincial Government Departments requiring communication by wireless telegraphy and telephony . . . .[3]

It seems clear that the nucleus of officers who formed the RCCS in the early 1920s saw the potential national development role as an excellent training vehicle for military signallers, and a means of building up the Corps to a more realistic size. It should be noted, however, that the Department of National Defence did not got out and actively seek these training opportunities. It was the Department of the Interior, encouraged by Logan, that actually took the initiative in the case of the NWT & YRS.

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[1] Militia Report, 1920, p. 7.

[2] Ibid., 1921, p. 27.

[3] Ibid., 1922, p. 32.

At the time DND agreed to take the project, the ability of the RCCS to run the system was purely theoretical. They had neither the men nor the equipment to do the job. The Deputy Minister warned the Department of the Interior that if the stations were to be opened in 1923, a final decision to go ahead had to be made by the end of November 1922:

> of the personnel required, two officers and seven other ranks must be enlisted and trained . . . . In addition, the greater part of the equipment must be obtained from England . . . ; further, work must be commenced in our own shops on the receivers and amplifiers which cannot be bought outside.[1]

The creation of the NWT & YRS provided the RCCS with a heaven-sent opportunity to increase its authorized establishment, and to acquire modern long range equipment and an excellent training environment for its personnel--all at no additional cost to the Department of National Defence.

A decision was made to defer the installation of the Mackenzie stations until the following year because of a specific problem that demanded immediate solution in the Yukon. While the gold rush had run its course by 1901, prospecting continued on a fairly heavy scale throughout the territory. A silver strike in the area of Mayo had developed into a modern mining operation that had grown in importance during the war and in the years immediately following. In the early 1920s the problem of communications between the mine area and the government centre at Dawson became acute. Radio stations would provide a means of linking the Gold Commissioner, the Mining Recorder, and the District Superintendent of the RCMP, all at Dawson, with their branch offices at Mayo.

What was in time to become an extensive northern communications network had its modest beginnings in August 1923. An eight-man party (commanded by Major W. A. Steele) departed for the Yukon with two 120 watt

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[1]Letter, Desbarrats to Finnie, 4 November 1922. RC Sigs Museum collection.

radio transmitters. The Yukon Field Force would have envied them their journey: steamship from Vancouver to Skagway, rail to Whitehorse, river-boat to their bases at Dawson and Mayo Landing. On 20 October, 1923 the first message was transmitted between the two stations.[1] The stations proved to be an immediate success and a popular innovation. Commercial firms also were quick to use the facility: banks, mining interests, and shipping companies transacted business by wireless with the "outside". Nor did the general public hesitate to avail itself of the service.

For the 1924 season, the Department of the Interior requested the establishment of the additional stations down the Mackenzie Valley. Fort Smith was the government administrative centre for the Mackenzie District; Fort Simpson was the site of a busy trading post at the junction of the Liaird and Mackenzie Rivers; and Herschel Island in the Beaufort Sea was an important summer post for fur trading and the transshipment of goods destined for settlements up the Mackenzie. At the same time, the Department of National Defence came to realize that reliance upon the Dawson-Hazelton telegraph line was unacceptable for the expanded operations. Accordingly, it was decided to construct a terminal wireless station at Edmonton, Alberta, from whence traffic could be switched directly to the nation-wide Canadian National and Canadian Pacific telegraph systems.

The 1924 program was only partially completed during the year. The Edmonton and Fort Simpson stations were finished as planned; and by October, all the traffic from the system, including the Dawson-Mayo link, was passing through to Edmonton. The equipment destined for Forth Smith was temporarily put to a novel use in that it was installed on the

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[1] A Short History of the Northwest Territories and Yukon Radio System RC Sigs (henceforth Radio System Short History), (Edmonton: ms unpublished, 1960), (prepared under the direction of the Commanding Officer NWT & Y Radio System RC Sigs), p. 1.

Hudson's Bay Company steamship Distributor in order to provide a means of communication for the Governor-General, Lord Byng, on his 1925 tour of the Mackenzie River area. This innovation underlined the utility of a communications infrastructure and the inherent flexibility of the system. The equipment was finally installed in Forth Smith in late 1925. The Herschel Island station did not open on schedule for the simple reason that the ship carrying the equipment (and the supplies for the detachment) sank in the Bering Sea. The detachment personnel had gone to Herschel via the Mackenzie route, so a relief craft bearing winter clothing, food, and supplies for them was dispatched down the Mackenzie. It also sank.[1]

The idea held by the senior officers of the RCCS that service on the NWT & YRS would not only provide valuable communications training, but also would bring out such admirable qualities as self-reliance and a flair for improvisation, was well borne out by the performance of the stranded Herschel detachment. Under the command of Lt. H. A. Young, the detachment members built a radio out of bits and pieces from their personal luggage and were able to establish communications briefly with the Dawson station to inform their confrères that all was well. Occupying an abandoned hut, they survived quite nicely, having been able to buy a small store of food and supplies from a passing whaler. The four-man detachment supplemented their food supply by hunting, acquired a dog team, traded for native fur clothing, and, it is claimed, even learned how to speak Eskimo.[2] Because of what they learned of developing trade and commerce patterns in the area, the replacement station, when it finally arrived in 1925, was installed at the community of Aklavik in the Mackenzie Delta rather than at Herschel.

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[1]Moir, p. 279.

[2]Edward Romaine, "Unsung Heroes Who Broke the Silence of the North", Weekend Magazine, Vol. 10, No. 14, 1960, p. 19.

In 1926, Herschel was occupied as a summer substation of Aklavik during the trading season. By then, the NWT & YRS was firmly established in the North. As the DND Report for fiscal 1924-25 noted:

> The amount of paid traffic (i.e. messages sent by commercial concerns or private individuals) shows a steady increase month by month and reports from the Yukon and Northwest Territories emphasize the importance that this radio system bears in the every day life of the inhabitants of that northern country.[1]

It was generally realized that the potential of the system had barely been tapped in terms of size or ability to perform ancillary functions. For these first few years, it must be noted that the System did not contribute to any developmental expansion. What it did do was permit previously established northern activities to be carried out with greater efficiency.

The establishment of the NWT & YRS had not been an entirely simple matter for the Royal Canadian Corps of Signals. Having jumped at the chance to run the system because of the training advantages it offered, the Corps was faced with the continuing problem of manning it. In early 1924 it was observed:

> The limited establishment (6 officers/57 other ranks) of the Royal Canadian Corps of Signals is not sufficient at present to enable the Unit to supply the Administrative and Training Staffs for the Militia and the special Communications Services that are now being carried out by the Department of National Defence for other departments and branches of the Dominion Government.
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> The Northwest Territories and Yukon Radio System . . . is being conducted without a sufficient margin of safety as regards staff and personnel training, engineering, supervision, etc.[2]

As arguments for increases of the defence establishment went in the 1920s, the Signals Corps was in a powerful position. The navy could cry out for destroyers, the air force could call for modern combat aircraft, and the Militia could lament the lack of funds to support training or to purchase tanks. The simple fact of the matter was that the various

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[1] DND Report, 1925, p. 39. [2] Ibid., 1924, p. 31.

Canadian administrations of those years were going to pare defence expenditure to the bone. Canadians lived in "a fire-proof house", and no government was going to "waste" money raising forces or purchasing equipment to defend against a non-existent enemy. The RCCS was different. The NWT & YRS was already proving to be a valuable asset to the civil life of northern Canada; at the same time it was obviously a secondary function of the Corps. Given financial restraints, a secondary function would be the first to be dropped over purely defence-related manpower commitments of the Corps. The fact that the NWT & YRS responsibility remained a separate and distinct part of the Militia role guaranteed the continued growth of the System. The RCCS was able to keep its unique training ground and develop an ever growing pool of highly trained communicators. From 1920 to the beginning of rearmament in 1936, the RCCS was the only component of the Permanent Force which actually increased in size.

In addition to the more lofty aspects of manning as related to departmental policy and funding, the RCCS met the problem which is faced by any military branch whose tradesmen have skills that were directly applicable to the civilian economy. When military pay rates were lowered in August 1924, thirty other ranks, or twenty-five per cent of the actual strength of the Corps, took their discharges. The DND Report for 1924-25 noted:

> It requires a minimum of sixteen months intensive training before a man is fit for employment on a radio station. The majority of the personnel who left the service had arrived at a degree of efficiency which rendered them valuable to the corps and by their loss the RCCS was faced with a very difficult task in finding the requisite number of trained personnel required for employment on the Northwest Territories . . . Radio Stations . . . .[1]

Despite these internal and domestic problems the NWT & YRS continued to thrive.

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[1] Ibid., 1925, p. 33.

A new station was added in 1927 at Fort Resolution on the south side of Great Slave Lake at the point where the Slave River enters the lake. Since any river traffic destined for the Mackenzie or Beaufort Sea ports from Fort Smith had to descend the Slave and cross the southern portion of Great Slave Lake itself, the radio station at Fort Resolution, which initially operated only during the July-October shipping season, was ideally sited to serve the varied needs of lake and river shipping.

The next year, the System expanded in scope if not in the number of permanent stations. The Royal Canadian Mounted Police schooner St. Roch, which usually operated in the Western Arctic, and the Hudson's Bay Company schooner Baymaud became low-powered out-stations on the net, transmitting through the relay facility provided by the Aklavik station. The first reported regular use of the NWT & YRS in meteorological work occurred in 1928. Special arrangements had been made with the Director of the Meteorological Service to have military signallers selected for duty on the NWT & YRS trained as Meteorological Observers. It was claimed that all personnel working on the system were so trained. Each station produced a twice daily reading which was transmitted to the Dominion Weather Office in Toronto.[1] By 1929, the System was beginning to realize its full potential in terms of service. In addition to providing a communications link from the Northwest to the rest of Canada, stations began to repeat daily news bulletins that were transmitted from the main terminal at Edmonton. Weather reports for aircraft flying in the North, and even stock quotations, were available on an "as required" basis.

1929 marks the beginning of NWT & YRS's direct support of the increasing mineral exploration activity that was taking place in the

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[1] Ibid., 1929, p. 32.

Northwest. The search for precious metals dominated the expansion of the System from the beginning of the Great Depression to the outbreak of war. As mines were opened, the NWT & YRS responded by building a radio station near by. When mines were worked out or, as was often the case, went into bankruptcy, the supporting stations were closed.[1] All of these stations, in addition to providing communications for the associated mining activity, joined the national weather reporting grid and supported flying operations in the local area.

It was the development of commercial aviation--bush flying--that in a large way permitted mineral exploration and development to be carried out in an efficient manner. Bush flying in the North was a hazardous occupation at the best of times. Meteorological data from military radio stations provided a much needed margin of safety for the new breed of pilots who routinely operated beyond the frontier. Initially, aviators obtained weather reports through the rather crude means of landing at a radio site and walking over to the station. In the mid 1930s, however, commercial companies installed modern high-powered radios, allowing pilots to transmit and receive messages while in flight. Eventually, the aviation support role became one of the most important services provided by the System. Some radio stations were established for the specific purpose of supporting flying operations in the Northwest.

In September 1939, the NWT & YRS had been in operation for sixteen years, and had become an important northern institution. By establishing the only communications grid in the Yukon and Mackenzie District,

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[1]During the period a total of nine new stations were opened of which three closed after only a few years' operation. The expansions and contractions of the System during the 1930s, in response to the vagaries of the mining industry is well chronicled in Moir in a chapter devoted to the NWT & YRS.

the System provided an absolutely key element for northern development. It has been noted that its original purpose--to support other departments of government by transmitting administrative messages--was eclipsed by other roles. The dominating reasons for the location of the majority of sites added after the first few years were the requirements of the mineral exploration industry, and, as a corollary, the needs of developing northern aviation. By accepting small commercial stations as system outstation subscribers, the full potential of the system was realized. The weather reporting functions of the various stations grew throughout the interwar years. As it was noted in the DND Report for 1939, "The NWT & YRS Yukon Radio System has become of increasing importance in the development of the vast Hinterland of Canada lying to the north of the Peace River District."[1]

While the Department of National Defence was prepared to admit that the work of the System was important to the area, this contribution to the creation of a frontier infrastructure was not seen by Canada's military leaders as a role of the national military establishment. The running of the System was seen as an ancillary task to the "proper" work of the Department--of defending the country and insuring internal order and stability. Similarily, the national development role taken on by the Royal Canadian Corps of Signals was never a political issue. The System was created by senior civil servants as an expedient solution to what was in the national scope of things, a minor problem.

It was not until 1936, fourteen years after its establishment, that a member of parliament even bothered to ask a question about Canada's soldiers in the North. Ian Mackenzie, the Minister of National Defence,

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[1] DND Report, 1939, p. 62.

spoke briefly to the subject. He described the many roles the System filled in support of other departments of the government, in particular the meteorological service. He admitted, however, that "it is largely a service for the civilian population". Miss Agnes Macphail, probably the most vehement anti-militarist who sat in the House during the interwar years, suggested that the vote should be taken out of the National Defence supply bill. (Miss Macphail was in somewhat of a quandary here because she favoured the complete elimination of the defence establishment, but here was a component of the Militia providing a demonstrably useful and important function to Canadian society.) Mackenzie replied:

> If any other department of government in Canada can get the same efficiency in service I have no objection to having it transferred.[1]

This is significant evidence that the government's decision to use troops to man the northern radio system was a matter of expediency rather than deliberate policy. The Minister's rather offhand reply also indicates that he had forgotten, for the moment, the original reason why the Department had taken on the running of the system in the first place. When the issue came up again in the House two years later, the Minister did recall the System's original purpose. A question had been asked of him concerning the relationship between the NWT & YRS and the Department of Transport radio system. The Minister revealed that an interdepartmental committee had studied this very question the previous year. "The actual finding was that there was very little duplication as between the Royal Canadian Corps of Signals and the Department of Transport". Mackenzie supported the findings of the committee in that "operation of the system by military personnel had distinct advantages from a defence standpoint", because the necessary training could not be gained in any

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[1]Debates, 19 May 1936, p. 2980

other way. Mackenzie argued that in this sense, the existing organisations were the most economical, for to remove the RCCS from the System would necessitate an increase in the Permanent Force vote in order to provide necessary communications training.[1] In depression-burdened Canada, as likely as not, the ultimate result would not have been an increase in the Permanent Force vote, but rather a curtailment or elimination of the training.

The Eve of War

Between the two world wars, northern development in Canada was never an important national priority. Until the southern, more hospitable reaches of the country were fully developed, the North would have to continue to wait. As in the past, a small population and limited capital made the taming of the distant, unknown North a "someday" proposition.

The frontier advanced but little. The Eastern Arctic saw virtually no development at all, although the RCMP and the annual Eastern Arctic Patrol protected the nation's sovereign claims against the day when development would come. In Mackenzie District and in the Yukon a nascent mining industry was established. Aviators tentatively probed the far distant places. Perhaps the most significant example of the restricted nature of northern development is the fact that, on the eve of war, there were no roads connecting either of the northern territories with southern Canada.

The defence concepts and strategic considerations relative to the North that had held in 1914 were still valid in 1939. The northern flank of Canada remained secure. Geography required no assistance from Canadian sailors, soldiers, and airmen. Northern defence was never a political,

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[1] Ibid., 13 May 1938, pp. 2884-2885.

military, or popular issue during the interwar period, although some visionaries anticipated the future capabilities of long-range aircraft and the resultant military significance of such a development. What military involvement there was in the North during this period was carried out for the purposes of national development. The typical employment pattern saw elements of the military establishment operating in support of other federal government department. In some cases the military actively sought out these roles for reasons of internal departmental objectives. In other cases the forces were directed to provide the necessary support, either because they held a monopoly on the necessary skills and equipment, or, more commonly, because using the resources of the Department of National Defence in this way represented a means of saving public money.

The total military involvement in the North during the period was quite limited. The Royal Canadian Air Force undertook a number of specific projects, but there was no continuity in these. Southern based aircraft, crews, and support facilities were deployed into the North, completed their mission, and returned to the South to await another call for their services. No RCAF northern operations were undertaken for military purposes.

The Militia's contribution to the North consisted solely of the men of the Royal Canadian Corps of Signals who over the years established a wireless communications grid over much of the Northwest. This particular program differed from the RCAF's northern approach in the sense that the radio stations run by army signallers were permanent installations.

The Royal Canadian Navy never ventured into northern waters during these years. In the absence of any evidence to the contrary, it must be assumed that a northern cruise by any of His Majesty's Canadian Ships was

never even considered.

It is interesting to note that neither the political nor military leaders of the day generalized from the particular precedent of the North-west Territories and Yukon Radio System: If signallers could run a communications grid, military engineers could build bridges, airfields and roads. Military flyers could survey, map, carry out resource exploration and establish a sovereign presence. Sailors could gain valuable sea time and operating experience by taking over the northern resupply role or cruising in support of scientific expeditions. Without a strong national imperative for northern development, however, it is not surprising that the interdepartmental structures necessary to create such integrated programs were neither attempted nor considered.

CHAPTER V

OPENING THE NORTH

Northern Military Projects During the Second World War

The most important factor affecting development of the North during the war years was the relationship between Canada and the United States--with the United States dominating the partnership. A familiarity with United States-Canadian defence relations is essential to an understanding of the great northern military expansion of the Second World War. The strategic outlook of both the United States and Canada differed in many ways, but a great commonality of interest lay in the area of the defence of North America as a whole.

The first step towards establishing an understanding about mutual defence problems was made by Franklin Roosevelt in the mid 1930s. The "good neighbour" policy he had articulated in 1935 was sharpened in the summer of 1936, when, during a speech at Chataugua, N.Y., he said:

> Our closest neighbours are good neighbours. If there are remote nations that wish us not good but ill, they know that we are strong; they know that we can and will defend ourselves and defend our neighbourhood.[1]

This was, of course, only a generalized statement of intent, but it did indicate the direction in which the President wished to take his country in defence matters.

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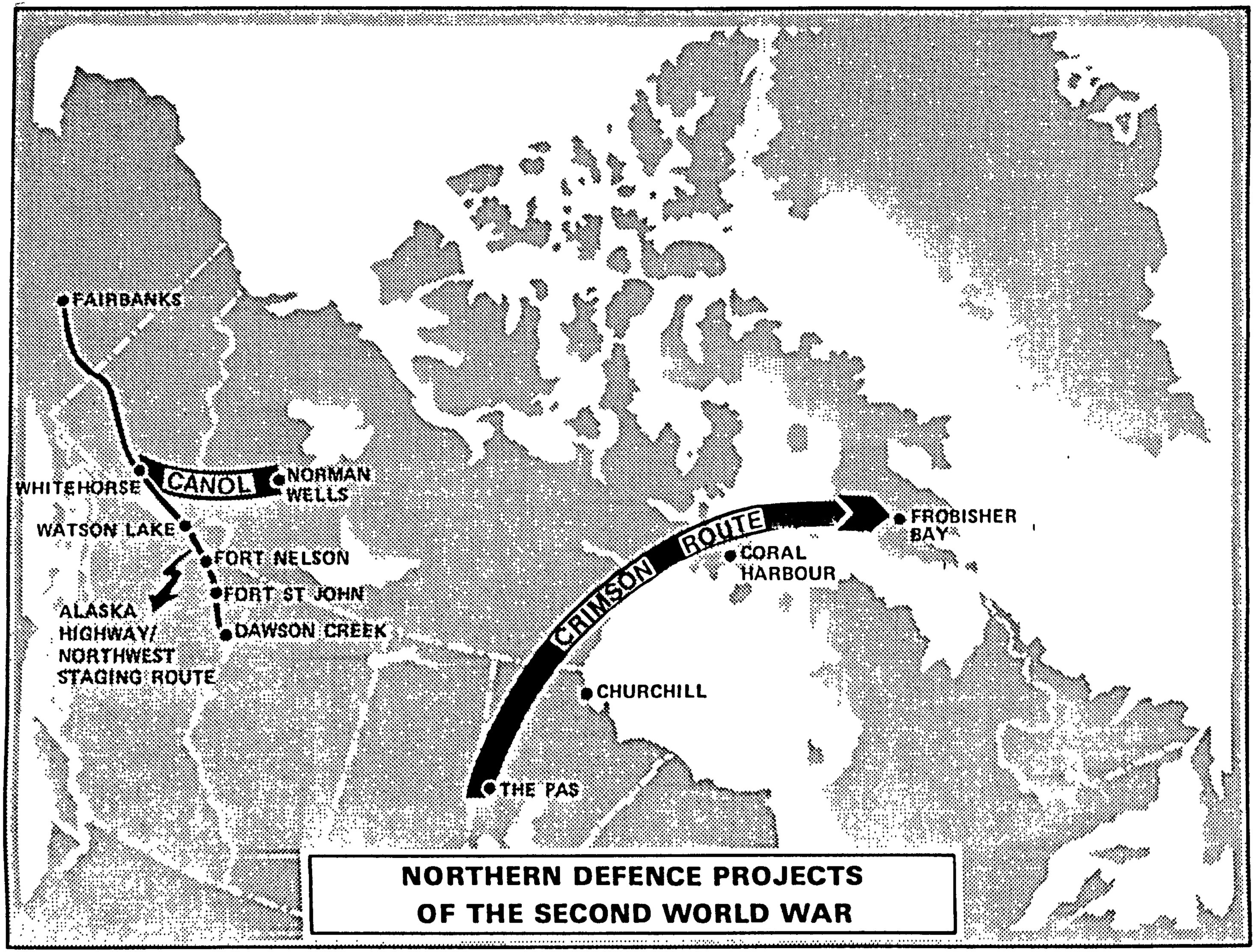
[1]Cited in Eayrs, In Defence of Canada, Vol. 2, p. 177. In the chapter entitled "The Road to Ogdensburg", Eayrs discusses the genesis of the Canadian-American defence relationship during the 1930s.

As American concern over the Japanese threat grew, so did their apprehension over the exposed and relatively isolated position of the Alaska territory. Following a visit to British Columbia in the autumn of 1937 where he discussed aspects of Pacific coast defence with the Premier of that province, the President directed the American ambassador to Canada to raise the issue of military conversations between the general staffs of the two nations. This contact led to occasional military liaison visits during 1937 and early 1938, but the nature of the discussions remained general and no commitments were made by either side. At a higher political level, the leaders of both countries discussed defence matters upon those occasions when they met. In August 1938 at a ceremony marking the opening of an international bridge near Kingston, Ontario, both President Roosevelt and Prime Minister Mackenzie King made public statements to the effect that neither nation would stand by idly if the other were attacked.

There was a hiatus in military liaison between the two countries from January 1938 until July 1940. In the interval Canada went to war; the United States remained neutral. Successive waves of allied disaster in the spring and summer of 1940 made Canadians apprehensive over their future security, and in June 1940 Canada took the initiative in attempting to re-establish defence liaison. A military relationship between a belligerent and a neutral raised serious, if subtle, political issues in the United States, and the American administration approached the Canadian proposals with some trepidation. However, during July, high level staff talks were held, their prime focus being defence in the event that Britain should fall to the German offensive.

The following month, a major step forward in defence coordination was made with the establishment of the Canada-United States Permanent



NORTHERN DEFENCE PROJECTS OF THE SECOND WORLD WAR

Joint Board of Defence (PJBD). Suggested by Roosevelt and warmly accepted by Mackenzie King, the PJBD provided the machinery for joint defence planning. In the words of the press release issued by the two leaders at Ogdensburg, N.Y. on August 18, 1940:

> The Prime Minister and the President have discussed the mutual problems of defence in relation to the safety of Canada and the United States.
> It has been agreed that a Permanent Joint Board of Defence shall be set up at once by the two countries.
> This Permanent Joint Board of Defence shall commence immediate studies relating to sea, land and air problems including personnel and materiel.[1]

The structure, operation, and work of the PJBD has been examined in detail by the official military historians of both countries.[2] The Board did not have executive authority; rather it was a coordinating agency. It produced recommendations that required executive approval by the President in the United States and the Cabinet War Committee in Canada. What is important to this study is that it was the means by which most, but surprisingly, not all, of the joint Canadian-American defence projects in the Canadian North were initiated.

The North West Staging Route

The tripartite agreement between Germany, Italy and Japan was announced in September 1940. Suddenly a secure air route between the continental United States and the Alaska Territory became strategically important. The matter was considered by the PJBD and the First Report,

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[1]Cited in Ibid., p. 208.

[2]For Canada, see C.P. Stacey, Arms Men and Governments: The War Policies of Canada 1939 - 1945 (Ottawa, Queen's Printer, 1970). For the United States, see Col Stanley W. Dziuban, Military Relations Between the United States and Canada 1939 - 1945 (Washington: Office of the Chief of Military History, Department of the Army, 1959), in the sub-series "Special Studies" of K.R. Greenfield (ed), United States Army in World War II. The PJBD documents were not an open source at the time this thesis was written.

issued on 4 October 1940, recommended that "Canada develops air staging facilities for aircraft en route . . . ." The report, in addition, recommended extensive defence works in Alaska and suggested arrangements that would permit the free passage of American military aircraft over Canadian territory in transit to Alaska.[1]

The precise nature of the Canadian requirement to develop what was to become the Northwest Staging Route was spelled out in the 10th Recommendation of the Board, issued on 14 November 1940:

> Air Staging Facilities--Western Canada
>
> The Board recommends that, to implement the recommendation contained in its First Report to the respective governments regarding the development of air staging facilities across Western Canada between the United States and Alaska, suitable landing fields, complete with emergency lighting, radio aids, meteorological equipment and limited housing for weather, communication, and transient personnel be provided at the earliest possible date by Canada at Grande Prairie, Fort St. John, Fort Nelson, Watson Lake, Whitehorse . . . .
>
> This development will provide means for rapid movement of light bombers and fighter aircraft into Canada, into Central Alaska via Whitehorse . . . and is considered essential to the defence of Western Canada, Alaska and the United States. Such means are vital to the effective use in joint continental defence of both the rapidly expanding air forces of the United States and the extension of air operating facilities in Alaska.[2]

The Board recommended this particular route following a meeting held at Victoria, British Columbia on 13 November. The Canadian Chairman of the Board, Colonel O. M. Biggar, was aware of existing Canadian Department of Transport plans for the development of a Northwest Airway and arranged for two former officials of the department to brief the Board.[3] A recommendation by the PJBD was one thing; governmental

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[1]Published in Dziuban, Appendix B.

[2]Published in Dziuban, Appendix A.

[3]A pioneer Northwest Airway east of the mountains had been developed by commercial firms using float and ski-equipped aircraft during the 1930s. In 1939 the Department of Transport began work to establish a modern airway complete with the necessary aerodromes and

approval of a recommendation was another. While President Roosevelt approved the recommendation within a week, the Canadian Cabinet War Committee did not do so until 15 December. In granting its approval, the Cabinet War Committee noted that in future, Canadian acceptance of PJBD recommendations would be withheld until the Treasury Board had the opportunity to consider the expenditures involved.

Despite the sense of urgency conveyed by the PJBD recommendations, it was not until early February 1941 that the Ottawa bureaucracy finally authorized and funded construction for the airway.

It is of interest to examine the actual construction of these various aerodromes as it clearly underlines the requirement for any northern development project to take into account the formidable obstacles created by climate, great distances, and wilderness terrain. Grand Prairie and Fort St. John presented no particular problems as they were located in "settled" areas of the country. Grand Prairie was on a rail line, and Fort St. John was located only 60 miles north of the railhead at Dawson Creek. A road that was usable in all but wet weather joined Dawson Creek and Fort St. John. Both locations already boasted modest aerodromes. The shipment of men and materials over rail and well-established roads was carried out easily. The construction of the Whitehorse facility was only moderately more difficult, and then, only because of the distances involved. Equipment was shipped north from the port of Vancouver to the Alaskan community of Skagway. From there it

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aids to navigation. The plan called for 3000 foot landing strips to be located at Grand Prairie, Fort St. John, Fort Nelson, Watson Lake, and Whitehorse, with emergency landing sites located approximately half way between each major field. The surveys for these fields were completed in January 1940, but no immediate work on the sites was undertaken. See Canada, DND, Directorate of Information Services morgue (DIS morgue) for "The Northwest Staging Route: A Summary of its History and Development During the Peace-Time Years and in War Time", Staff monograph, ms unpublished, March 1945.

was transported by the narrow gauge White Pass and Yukon Railway to the railhead at Whitehorse. Whitehorse, too, had an airstrip which had been improved over the years by the Yukon Territorial government, the British Yukon Navigation Company, and Pan-American Airways. All that was required by the Northwest Airway project was to regrade, lengthen, widen and pave the strip to meet national standards. Again, established transportation routes made all the difference.

The isolated sites at Fort Nelson and Watson Lake, however, presented major problems. Fort Nelson was 300 miles beyond the railhead and 240 miles from the closest road; Watson Lake was 200 miles beyond Fort Nelson. The main difficulty was not the actual construction of the airfields but the tremendous transportation problem of concentrating the required men, equipment, and materials at the work site. Virtually every mode of transportation was used to open up routes and move supplies. Some parties used horses and dog teams; bulldozers hacked out trails and opened up winter roads over the ice of frozen rivers and lakes. Ottawa's delay in approving construction contracts until the winter transportation season was almost half over resulted in a serious interruption in the flow of materials to the isolated sites. The spring thaw and ice break-up effectively brought all movement to a halt. As a result, during the summer every available water route had to be pressed into service, despite the need for frequent trans-shipment of goods and the requirement to move more boats onto the routes. Seaplanes were used to fly in key workers and portable sawmills. There was no limit to the ingenuity used to complete the project.

By September 1941, all five airfields were open for daylight operations during good flying weather. Three months later basic radio

ranges had been installed at all sites.[1] From the date of the issue of authority to attempt the project to the actual completion of the austere facility had taken seven months--a major feat of engineering by the standards of the Canadian North.

As 1941 progressed, the strategic importance of the Northwest Airway became increasingly evident in view of the deteriorating situation in the Far East. Defence planners monitored progress carefully; the PJBD urged on the project in its 19th Recommendation:

> Canadian-Alaskan Staging Fields
>
> On the consideration of the report as to the progress being made with the construction of the Canadian Airway between Edmonton and Whitehorse, attention was directed to the recent change in the far eastern situation the effect of which is to make the completion of the airway to Alaska of extreme urgency. It was pointed out that the urgent needs for air strength in Alaska may suddenly increase beyond those heretofore anticipated; that the preparation of airdromes in Alaska is being expedited by the United States as much as possible, but that large numbers of aircraft if sent there would at present be relatively isolated.
>
> In view of this, the Board decided to invite attention to the fact that the completion of both the Canadian and the United States sections of the airway to a point which would permit its use at the earliest possible moment had become of extreme importance and to recommend that other considerations should give way to that of completing as quickly as possible the air route which will permit the rapid reinforcement of the air strength in Alaska.[2]

At the same time as Canadians were struggling with their wilderness to build the Airway, the Americans in Alaska were attempting to accomplish a feat of the same magnitude in their territory. The Americans, like the Canadians, found that the great difficulties were caused by transportation problems. The presence of permafrost at many locations did nothing to make their job easier. Whereas in 1940 there were only four airfields in all of Alaska capable of supporting military aviation,

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[1] Ibid.

[2] Published in Dziuban, Appendix A.

by the end of 1941 there were ten strips completed and another six in the final stages of construction.

After Pearl Harbour, it was evident that they would have to be used. American defence plans for the Pacific coast were in disarray. The United States Navy reported on 8 December 1941 that it would be unable to carry out tasks assigned to it under the war plan. The British loss of Repulse and Prince of Wales on 10 December served to heighten the mood of pessimism that gripped North America. In what, in retrospect, was a wildly inaccurate assessment, the United States estimated on 12 December that Axis forces might succeed in an attempt to capture Alaska. Were an attack to be launched on Alaska, the United States was admittedly not in a position to do much about it. While the United States Navy had the responsibility for the strategic defence of the area, the protection of military bases was an Army responsibility. The Army plan to rest this defence primarily upon air power was immediately negated by the fact that the 2,200 man Alaskan Air Force possessed only six old medium bombers and a dozen obsolete pursuit planes. The lack of air resources was compounded by the austere state of what fields there were. There were no bases at all in the Aleutian Islands, the most vulnerable portion of the Territory.

The first attempt to build up the air resources of Alaska was a disaster. The 11th Pursuit Squadron, equipped with twenty-five P40 aircraft, and the 77th Bombardment Squadron, operating thirteen B25s, were ordered to Alaska on 10 December, but lack of specialized winter equipment and maintenance delays in preparing the aircraft for northern operations resulted in their not being able to depart from Spokane, Washington until 2 January 1942. Twenty-five days later, all was a shambles. Six of the pursuit planes had crashed, another six were strung out somewhere along the Northwest Airway; only thirteen had arrived at their destination.

The bombers fared as poorly with five of the thirteen crashing en route. This minor disaster was attributed to "the inexperience of the pilots, together with poor communications and inadequate landing fields along the route".[1] It was obvious that the Canadian facilities would have to be considerably improved. The manner, method, and rate by which this improvement took place was to cause no small amount of difficulty between Canada and the United States.

The need to develop the control and airdrome facilities along the route presented Canada with something of a dilemma. The original airway had been developed in peacetime for the purposed of civil aviation, although the strategic importance of the route for the defence of Alaska had been acknowledged obliquely by Department of Transport officials. Canadian politicians and government officials were wary of ceding construction and operating rights to the United States for fear of the commercial and sovereign precedents such an abdication of responsibility would create.[2] On the other hand, Canadian resources to undertake the required improvements were extremely limited as the tremendous expansion of the navy, army and air force had, by 1942, placed a severe strain on available manpower. Construction industry resources to meet existing defence related commitments were already in short supply.[3] The ultimate solution to the problem was in the best Canadian tradition: a compromise.

The nature of the required improvements was discussed in Ottawa on 11 March 1942 at a meeting attended by representatives of the Air Services Branch of the Department of Transport, the RCAF, and the USAAF.

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[1] Dziuban, p. 203.

[2] Stacey, Arms Men and Governments, pp. 280-381.

[3] Wood, Part X, p. 6.

At the request of J. A. Wilson, the Canadian Director of Air Services, the Americans submitted a paper entitled "Details of Improvements Desired in Canada to Facilitate Operation of a United States-Canadian-Alaskan Military Air Route". This paper became the basis for discussion at another meeting held on 10 April 1942. Agreement was reached to improve the radio range installations on the airway by installing intermediate stations between Fort St. John and Fort Nelson, between Fort Nelson and Watson Lake and between Watson Lake and Whitehorse. Two new stations were to be built between Whitehorse and Northway on the Alaska-Yukon border. In order to standardize the equipment and operation of the airway, the Department of Transport agreed to select and develop the sites, purchase and install the necessary equipment, and operate the stations. It was further agreed that the USAAF could install ground to air radio equipment at each of the main fields along the airway. With respect to needed support facilities at each aerodrome, the American representatives presented a long list including such items as hangars, barracks, messhalls, and office buildings. The Canadian authorities agreed to carry out the requested construction.

The issue of who was to pay for all this work arose early in the discussions, but Wilson stated that such matters were beyond his competence to discuss. He suggested that the Americans should have their State Department approach the Canadian Department of External Affairs to negotiate a financial settlement. In the interval, Wilson undertook to "obtain authorization to get the various programmes of work upon which an agreement was reached put in hand immediately utilizing Canadian funds."[1]

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[1]D Hist, 181.009 (D6244) "Northwest Airway Facilities" (Minutes of Conference 10 April, 1942).

Having said that Canada would handle the initial financing, the Department of Transport was faced with two problems: obtaining the necessary funds to undertake the work pending a political decision on the final financial arrangements, and calling to the attention of the government the requirement for such a political decision. Short term funding presented no major problem: Department of Transport applied to Department of National Defence for the funds, which were quickly forthcoming.[1] The political issue, however, proved to be somewhat more complex. The senior American representative at the conference had indicated that the United States was willing to pay for any or all of the expenses associated with the requested improvements. The United States, concerned over the security of Alaska, wanted quick action and was willing to use U.S. Army engineer units to undertake the required work. Canada was reluctant to agree to extensive American participation in the construction or funding of the project for fear of post-war repercussions that might not be in the sovereign or commercial interest of Canada. Colonel Biggar called these matters to the attention of the government, and on 22 April the Cabinet War Committee decided that the United States could pay for additional work beyond Canadian standards, but that Canada would retain full title and control. Canada also retained responsibility for the construction of intermediate emergency landing fields.[2]

Before much of the required work could even be started, the Japanese carrier-borne attack and occupation of the Aleutian islands of Kiska and Attu provoked the major crisis of the war for the Northwest.

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[1]D Hist, 181.009 (D6244) "Aerodrome Development Committee Submission No. 591, Edmonton to Whitehorse Route" April (?), 1942.

[2]D Hist, 348.013 (D2) "Summary of Cabinet War Committee Decisions on Canada - United States Joint Defence Construction Projects in the Northwest." n.d. See also Stacey, p. 380; Dziuban, pp. 203-204.

Eleven American commercial airlines provided some fifty aircraft to operate on a round-the-clock shuttle to fly reinforcements and war supplies to Alaska. In the early summer of 1942, with the reinforcement crisis stabilized, the United States made the decision to use the Northwest Staging Route to ferry war planes to their Russian ally, placing even more pressure on the route. To complicate matters further, the internal administration of the Airway underwent a reorganization in June. What had started before the war as a modest civilian project became, by 1942, a major military ferry route. As a result of this development, responsibility for the operation of the route was transferred from DOT to the RCAF. DOT however, retained responsibility for construction projects along the airway. From 1942 until the spring of 1943, DOT contractors worked towards completion of the project. American military engineers were deployed to assist in the work in August and again in September, but were quickly withdrawn on both occasions when Canadian labour groups protested.[1]

New construction and improvement of existing facilities was undertaken as American requirements increased steadily. In February 1943 the PJBD in its 29th Recommendation suggested that United States military engineers be permitted to undertake the next phase of construction work. The Cabinet War Committee refused approval. (The 29th Recommendation is unique in that of the 33 wartime resolutions of the PJBD, the 29th is the only one that was not approved by both governments.) In any case, the Canadian government later gave assent to what amounted to the intent of the 29th Recommendation, and there followed an intense period of American-sponsored development that greatly enlarged and improved the facilities of the Northwest Staging Route. Canada reverted to the former pattern

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[1]Dziuban, p. 206.

of insisting that future work be undertaken by Canadian contractors and Canadian labour on 15 March 1944. This system continued until the war's end.[1]

On 20 February 1944, C. D. Howe, the Minister of Munitions and Supply made a long statement in the House of Commons about the North West Staging Route. He summarized the pre-war history of the development of the route and the work that was done during the 1939-41 period before the United States entered the war. He then reviewed the earlier government decision that Canada would only pay for those permanent construction works that were required by Canadian standards and that the United States would bear the cost of those works over and above Canadian standard. He noted, however:

> . . . the northwest staging route is Canadian property, owned and operated by the Canadian government. It was built and developed by Canada, with the cooperation of the United States army engineers and workmen. The cost of the project is to be borne wholly by Canada.[2]

The Canadian government fully anticipated that the airway would play a major role in post-war international aviation. Canada was taking what were seen as necessary steps to ensure that control of the airway would remain firmly in Canadian hands.

The operation of the airway was also a source of continuous friction between the United States and Canada. As was noted above, the Northwest Airway was militarized in September 1942 when the RCAF took over responsibility for what became known as the North West Staging Route. Six officers were dispatched to each of the stations on the route in mid-July to begin preparations for the eventual takeover of the system by the

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[1]Dziuban discusses in some detail (pp. 205-213) the problems of U.S.-Canadian co-operation in the construction of the NWSR.

[2]Debates, 1944, pp. 1011-1013. Dziuban, in discussing costs of the route does not mention that Canada paid the United States for the work done during the American construction phase.

Canadian military. The instructions given to these officers are of interest inasmuch as they indicate how sensitive Canada was to the control aspect of the international project. The officers were informed that they "were to act as 'ambassadors' of the Canadian Government for the present", an interesting notion, and perhaps an unfortunate word choice when one considers that these RCAF officers were, after all, serving in their own country. The intent of the instruction is clear. It went on to say that while initially the officers were there in an unofficial capacity, and were to "help out" in any way they could, they were to allow

> the impression to grow that at some future date, not far hence, that the RCAF would eventually take over the official operation of this route without disturbance to any of the parties now using the present services.[1]

In the actual operation of the Staging Route, the RCAF encountered two main problem areas: those arising out of continuing DOT activity and some USAAF activities. While the RCAF was responsible for the control, maintenance, and defence of the route, DOT continued to supply meteorological reports and some communications services. Cooperation between these two federal agencies was dependent upon local liaison as there was no central overall Canadian airway authority. An RCAF proposal made in early 1944 to bring DOT personnel under military control was resisted by the Department of Transport and came to nought.[2] The system "muddled through" for the duration of the war.

With respect to the USAAF activities, it would appear that the Americans were rarely satisfied with the level or quality of services

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[1]D Hist, 181.009 (D6244) No. 4 Training Command Organization and Policy, March to September 1942, "Northwest Staging Route", 15 July, 1942.

[2]D Hist, 181.009 (D6574) "Centralized Local Canadian Authority on the NWSR", 16 February, 1944.

provided by the RCAF on the route. American attempts to share the air traffic control duty at Whitehorse were firmly rebuffed. More seriously, when the USAAF began to build a control tower at their Watson Lake facility and stated that it was their intention to build such towers at each of the main stations on the route, the project was seen by the RCAF officers working on the NWSR as "an effort to move towards the establishment of USAAF control organization along the Route by a procession of limited objectives."[1] The USAAF was instructed by Canada to stop unauthorized constructions. Control remained in RCAF hands.

The internal control of the NWSR underwent several administrative and control changes during the war. Initially, the route was run by No. 2 Wing of 4 Training Command, RCAF. On 1 January 1944 control was transferred to Western Air Command. This particular change is indicative only of the changing wartime structure of the RCAF. The formation of a new command, North West Air Command, on 1 June 1944, with the unique responsibility of running the route, was significant in that it represented a clear and conscious attempt by Canada to exert a greater level of control over American defence activities carried out on Canadian soil. Speaking to a group of officers who were to staff the newly formed North West Air Command, Air Vice Marshal H. D. Lawrence said, "what we are going to do is to Canadianize the Route".[2]

A characteristic of joint Canadian-American defence projects in the North is that they were rarely used for their original intended purpose. Three general categories of aircraft operation took place

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[1]D Hist 181.009 (D3391) North West Air Command (RCAF) 31 December 1942 - 4 April 1944, "USAAF Control Towers on Hangers - NWSR", 17 January, 1944.

[2]D Hist 181.009 (D3941) North West Air Command - North West Staging Route Organization and Administration. "Conference - June 10th 1944".

along the Northwest Staging Route: the deployment of short range tactical aircraft to Alaska for the purposes of Alaskan defence, administrative and logistic flights in support of the Alaskan garrison, and aircraft being ferried to the USSR via Alaska and Siberia. As was noted above, it was mid-1942 before the Siberian ferry route was accepted by the USSR, yet by far the majority of the flights along the airway were in support of this program. Of the 8,646 aircraft deployed over the staging route between 1942 and 1945, 7,930 continued on to the Soviet Union; only 716 were destined for Alaskan defence. Most of the aircraft delivered to the USSR were short-range tactical aircraft; the Northwest Staging Route was the most secure and most direct means for the United States to provide war aid to its Soviet ally.[1]

The Alaska Highway

The geographic isolation of Alaska was a minor cause of concern to American strategic planners throughout the 1930s.[2] In 1936, the United States government acting mainly out of economic interest approached Canada to consider the advisability of undertaking the construction of a northern road. Reflecting Canadian strategic thinking of the day, a Canadian General Staff Memorandum rejecting the proposal read in part:

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[1]Dziuban, pp. 215-216.

[2]Donald MacDonald, a leading citizen of Fairbanks, Alaska began a crusade to build a northern highway in 1928. Two years later in response to public interest in the project, the Hoover Administration in the United States appointed three commissioners to study the possibilities of an Alaska road. In 1932 an international board including both Canadian and American officials studied the problem and concluded that the proposed highway could be built for 27 million dollars and recommended that both countries share the cost. The project was shelved at the time because of the financial problems resulting from the Great Depression. See Philip H. Godsell, Alaska Highway (London: Sampson, Low, Marston and Company Ltd.), 1946, p. 109.

> The building of a . . . highway through British Columbia and the Yukon would provide a strong military inducement to the United States to ignore our neutral rights in the event of a war between that country and Japan, a danger which we should do everything in our power to avoid.[1]

In March 1937, President Roosevelt brought up the subject when Prime Minister Mackenzie King visited Washington. The President saw the proposed road to Alaska in terms of a defence facility in the event of a war with Japan. Mackenzie King was noncommittal. Roosevelt found a more enthusiastic supporter in the person of P. D. Pattullo, the Premier of British Columbia, whom he visited in September of the same year; but Pattullo's public statements in favour of the proposed highway were based on the anticipated economic advantages that would accrue to the province. The Premier's remarks did nothing to change the federal government's determination to remain uncommitted. Mackenzie King wrote that:

> Grounds of public policy would not permit the using of funds of a foreign Government to construct public works in Canada. It would be . . . a matter of financial invasion . . . .[2]

Canada, however, agreed to participate in another joint study on the feasibility of the project with respect to prospective routes and costs. In April 1939, the representatives of both countries met in Victoria, and later undertook ground and aerial reconnaissances of the three possible routes that had been identified. A year later, the joint commission recommended the selection of an Edmonton-Fairbanks route. It was estimated that with a 24-foot grade, the road would cost approximately 25 million dollars and take five to six years to build.[3]

While all evidence points to the fact that the United States and, to the extent that she was interested, Canada also, saw the proposed

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[1]Cited in Eayrs, II, p. 178.

[2]Ibid. [3]Godsell, p. 110.

highway in terms of defence of Alaska, it was not seen in those terms in Japan. When the Japanese foreign office learned of the development of the Northwest Airway and the proposals to build the Alaska Highway, they treated it as an offensive gesture. The newspaper Hochi commented that "American measures in this direction will be regarded as a continuation of the horseshoe-shaped encirclement of Japan by the Washington Government".[1]

During 1941, interest in the Alaska highway project increased in the United States and Canada. States and provinces which stood to benefit in an economic sense from the highway (depending upon which route it took) lobbied for the highway to be built on a course that favoured their own geographic location. Still, the Canadian federal government remained reluctant. When the United States Secretary of State, Cordell Hull, sought Mackenzie King's support for the project, King demurred, stating that he favoured developing instead the Northwest Airway, a project already underway. In October 1941, the United States War Department threw its weight behind the highway proposal, declaring the projected road to be "a long-range defence measure".[2]

Following the Japanese attack on Pearl Harbour, event relating to the Alaska Highway moved toward a swift conclusion, as apprehension over Japanese capabilities and intentions infected the highest levels of American government. On 16 January 1942, the President directed his Secretaries of War, Navy, and Interior to report on the need for a highway. At the same time, he sounded out his two principal military advisors, General Marshall and Admiral King. Both anticipated a Japanese

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[1]Cited in Godsell, p. 115.

[2]Dziuban, pp. 217-218.

raid on Alaska, and Marshall favoured a highway. Admiral King, on the other hand, while refusing to guarantee uninterrupted sea communications with Alaska, did not feel that a highway was required.[1] Roosevelt's cabinet committee reported that they felt that a highway was necessary in the event that sea lanes to Alaska were cut by Japanese action. It was also recommended that the road should follow the general line of the Northwest Airway. From a purely military point of view, this particular choice of route was attractive in that it was relatively secure, located as it was behind a formidable mountain range. Another advantage was that the road when completed would form a valuable navigational aid for pilots flying the airway. On 11 February 1942, the President approved the plan, funded it, and directed that the necessary arrangements be made with Canada through the PJBD.

During the same period, the Canadian Chiefs of Staff Committee had examined the highway proposal, taking a narrow, purely Canadian viewpoint. They concluded that

> . . . even if this highway could be completed during the present war, it would only indirectly affect the defence of the West Coast. We are of the opinion that the construction of this road by Canada is not warranted.[2]

To the Chiefs of Staff, defence against any Japanese threat to Canada required efforts to be focused on the ports and waters of British Columbia. Alaska, and the road to it, was an "American problem".

Given the prevailing American mood in the early days of 1942, it is unlikely that the United States would have accepted Canadian refusal or continued delay on the highway project. Had Canada not co-operated

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[1] Ibid, pp. 218-221.

[2] D Hist, 193.009 (D4), Vol. 3, "Chiefs of Staff Committee Memorandum" (To Cabinet War Committee), 9 February, 1942.

it is most likely that tremendous American pressure would have been brought to bear to force the issue. The American ambassador to Ottawa had forewarned the Canadian government the previous week that his government had decided that a highway to Alaska was vital to the defence of the territory. On 12 February, the United States ambassador formally requested permission to deploy survey teams to Canada and, subsequently, to construct the road. The Canadian government capitulated and, forgetting its earlier reservations concerning sovereignty, agreed to a survey and the construction of a pioneer road between Fort St. John, B.C., and Boundary, Alaska. The PJBD somewhat belatedly considered the project in its meeting of 25-26 February. Although some Canadian members remained skeptical about the wartime utility of the road, discussion was somewhat academic since the two governments had already agreed to build the road. The PJBD's 24th Recommendation read,

> as a matter pertaining to the joint defence of Canada and the United States, a highway be constructed along the line of staging route airports and connecting with the existing road system in Alaska and Canada.[1]

The American Section of the PJBD informed their Canadian colleagues that the United States was prepared to pay the entire cost of building and maintaining the highway in view of the Canadian contribution to the war effort since 1939 and Canada's financial obligation for the North West Staging Route.

The agreement to build the Alaska Highway was formalized with the approval of the PJBD's 24th Recommendation and by an exchange of diplomatic notes between the two countries on 17 and 18 March. The plan was that the United States would survey the route, build a pioneer road using civilian contractors. The United States further agreed to maintain the

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[1]Published in Dziuban, Appendix A.

highway until six months after the war's end, at which time it would become an integral part of the Canadian highway network.

Canada, for her part, provided only the right of way for the highway and a number of financial reliefs and customs exemptions in respect of the entry of equipment, materials, and construction workers destined for the highway. The Canadian Chiefs of Staff Committee maintained their parochial attitude throughout. They allowed that the PJBD recommendation made sense--just as long as the United States was prepared to pay the bill and do the job.[1] For the remainder of the war the Canadian military showed little, if any, interest in the Alaska Highway.

The construction of the Alaska Highway was by far the greatest engineering project undertaken in the Canadian North up to the end of the Second World War. Between Dawson Creek, British Columbia and Fairbanks, Alaska, stretched 1,523 miles of wilderness. Both the climate and the terrain contributed to the obstacles the American engineers had to face. Winter cold, break-up and freeze-up, permafrost, swamp, ice, mountains, virgin forests, and innumerable rivers had to be met and dealt with. The United States Army approach to the problem took the form of a massive military campaign. On 16 March 1942, the initial contingent of construction troops arrived at the railhead at Dawson Creek. The troop build-up continued until there were seven regiments of engineers working on the project, a total of over eleven thousand men.[2]

Work was undertaken at both ends of the route and at those intermediate points where it was possible to deploy men and equipment.

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[1] D Hist, 193.009 (D5), Vol 4, 3 March, 1942.

[2] A detailed account of the engineering aspects of the construction of the Alaska Highway is to be found in Lyman L. Woodman, "Building the Alaska Highway: A Saga of the Northland". The Northern Engineer, Vol. 8, No. 2, Summer, 1976.

Initially the project was divided into two independent commands with headquarters for the north at Fairbanks and for the south at Fort St. John. In August, with work well under way, the two formations were merged into a single Northwest Command under Major General James A. O'Connor, who established his headquarters at Whitehorse. In mid-August, 1942, the engineers were reinforced by 7,500 men from the U.S. Public Roads Commission who assisted in the construction of the pioneer road and began the work of upgrading the highway to a regular two lane, 26-foot highway.[1]

A longtime northern resident, Philip Godsell, described the impact of highway construction on small northern communities during 1942 and 1943. The boom and bust cycle was no new phenomenon to the North. It had been seen in the Klondike at the turn of the century and repeatedly in the Mackenzie during the interwar years. The locals, realizing that it would not last forever, made the most of the opportunity.

> Dawson Creek pyramided from a few hundred disgruntled settlers to a thriving town of ten thousand.
>
> . . . . (T)his unexpected eruption furnished a cash market at boom prices for all their . . . produce; employment for themselves and their teams at unheard of prices.
>
> Dawson Creek at the end of steel daily added new spurs to accommodate the lines of flatcars loaded with bulldozers, trucks, cranes, giant scrapers and bulging boxcars.
>
> . . . . (A) boom frontier town of cafes, pool rooms, frame hotels, warehouses and barber shops arose to the eternal tattoo of carpenters' hammers. Within a miraculously short time the hamlet of Dawson Creek with its three hundred population became a rip-snorting frontier town of ten thousand with a floating population ever passing to and fro.[2]

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[1] Dziuban, p. 222.

[2] Godsell, p. 134. It was not all that rip snorting--at least by American frontier standards. A newspaper article of 30 November, 1942 was headlined "Man Willing to go to Jail to Get a Few Hours Rest." The story, however, revealed that because of a housing shortage the jail was the only place in Dawson Creek that was not filled. Local officials, when interviewed, reported that there was no crime problem as "both soldiers and civilians are so busy on the road that there is little time for getting into trouble". The fact that the closest liquor store was

A similar fate overtook Whitehorse. The administrative centre of the construction work was located there and it also developed as a major base on the North West Staging Route. Despite the lack of recreational facilities (Whitehorse boasted three "dingy" beer parlours and a cinema that featured long-dated news films) the boom was orderly. A newspaper report appearing in November 1942, read in part:

> The Royal Canadian Mounted Police of the neighbourhood are high in their praise of the sobriety of the American soldiers who have been building the highway.[1]

The construction of the Alaska Highway caused considerable public interest and attention in Canada. In part, this was due to the massive publicity that attended the decision to build it, and the subsequent opening of the route seven months later. This was in contrast to many other northern defence-related projects which, if not classified as being secret, certainly did not have public attention drawn to them. On the whole, comments in newspapers and journals were strongly in support of the project. The defence aspects of the route were treated in a rather uncritical and simplistic fashion; in other instances, newspaper interpretation of the intended use and significance of the highway was simply wrong. The Sydney Post-Record reported:

> (I)n building it the Army was interested in just one thing; cutting a swath over which supplies could be slugged from America's industrial arsenals to the strategic bases in Alaska which extend a friendly hand towards Russia and China and point a potential dagger at the heart of Japan.[2]

It has been seen that the North West Staging Route was important to the supply of combat aircraft to the Soviet Union and the relationship

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several miles distant perhaps contributed to this happy state of affairs. See Hamilton Spectator, 30 November 1942.

[1] Winnipeg Free Press, 12 November 1942.

[2] The Sydney Post Record, 17 December 1942.

between the Alaska Highway and the North West Staging Route has been noted. It is simply incorrect, however, to argue that the route was built for that purpose. In the same vein, the possibility of launching a major offensive from Alaska toward the Japanese homeland was not a significant strategic alternative by the end of 1942.

A member of the Manitoba provincial government made a tour of the highway in early 1943 and spoke of his visit on the service club luncheon circuit after his return. He too showed signs of confusion. In his interpretation, completion of the Highway would permit regular shipping to Alaska to be switched from sea to road, a change that he regarded as desirable,[1] presumably because such a move would free shipping for use in other theatres. As noted above, this was never the intention: the highway was built as a backup for use in the event that the more economical and efficient sea route became unusable.

The main focus of Canadian public comment during the 1942-1944 period was the impact the Highway was expected to have upon northern British Columbia and the Yukon in the post-war era. The highway was seen as a means of opening up the Northwest in terms of markets, settlements, and commerce. Thomas H. Ross, a Canadian Member of Parliament who visited the highway in the spring of 1943, predicted "a great rush to populate that part of the Dominion after the war . . . ." In particular, the Peace River District of northern British Columbia, now that access had been created to "the abundant farming, mining and trapping opportunities, was expected to fill up fast."[2] Several other visitors to the area commented upon the impact the highway would have in terms of new markets

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[1] Regina Leader Post, 12 April 1943.

[2] The Ottawa Citizen, 14 April 1943.

for western Canada and an anticipated high tourist trade in the area itself. Edmonton, it was predicted optimistically, would replace Seattle as the main source of supply for Alaska.[1]

While southerners and transients in the North waxed enthusiastic about the future of the Yukon, northerners on the whole remained unconvinced that a new day had dawned in the Northwest. May were doubtful that the highway would remain open after the war. General O'Connor, however, explained in an interview that "the peacetime maintenance of the road would probably induce less cost and effort than most people realized", and expressed the opinion that the road would remain in service. He added that the upgrading work done by the United States Public Roads Administration personnel had already taken the route well above the required military standard.[2]

Public interest in the relationship of the native peoples of the North to the highway tended to be marginal and was used to provide 'colour' for various articles appearing in Canadian newspapers. It was noted that at native communities the highway passed by, there was a rush on the souvenir moccasin business. It was undoubtedly some unknowing American soldier or construction worker who brought measles to the small Indian settlement at Teslin. The resultant epidemic, which touched all but four members of the band and killed three of them, was reported in southern newspapers without editorial comment.[3] There appears to have been no suggestion ever made in either Canada or the United States that the native peoples should be asked what they thought of the project.

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[1] Regina Leader Post, 12 April 1943.

[2] Hamilton Spectator, 30 September 1943.

[3] Edmonton Journal, 24 November 1942.

No effort appears to have been made to safeguard the native way of life or their aboriginal rights. Native rights were simply not an issue in Canada at that time, particularly during a period of wartime urgency. The northern Indians were left to stand at the roadside to watch and to wonder at the "black white men", the negro construction troops of the United States Army. Inarticulate in terms of white society, and unorganized in any way that was politically meaningful, there was nothing that they could do, and nobody to do anything for them. Godsell, who knew the territory and the people as well as any white living at the time, wrote:

> Penned up on their reservation . . . the ragged remnants of the once-powerful Beaver tribe gathered around . . . and gazed with smouldering eyes and tight-drawn lips as convoy after convoy of American troops hurtled through their erstwhile hunting grounds without so much as giving them a passing glance.[1]

The project to improve the road to highway standard continued until November 1943. Most of the American engineer troops were withdrawn upon completion of the pioneer road and further work was done by civilian contractors. At the height of the construction season, 81 firms employing a total of 16,000 men were operating 11,100 pieces of road building equipment. American Army engineers were returned to the job in its final stages and finished the construction phase and for the remainder of the wartime period the highway was operated and maintained by the United States Army. The road that previous studies had estimated would take five to six years to build had been smashed through in seven months and transformed into a higher quality frontier highway in another year.[2]

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[1] Godsell, p. 134.

[2] Dziuban, p. 222.

Even as the United States Corps of Engineers were just beginning to come to grips with the full range of construction problems facing them, the United States Navy and the Imperial Japanese Navy clashed at Midway. The American victory marked the turning point of the Pacific war; but this fact was not immediately appreciated in the Northwest, for as a subsidiary operation, Japanese forces had struck at Dutch Harbour in Alaska and occupied the barren Aleutian Islands of Attu and Kiska on 7 June 1942. There the Japanese stopped: there never was any Japanese plan to invade Alaska. At best, the two lodgements served to tie up a few American units in masking them, and substantially more when, nine months later, the United States and Canada finally mounted a campaign to eject the invaders.

The Alaska Highway, in keeping with its official status as a back up facility, played no significant part in the build-up of American forces in Alaska. By the autumn of 1943 when the Aleutian campaign had been concluded, a mere 54 tons of supplies had been delivered by road to Alaska Defence Command.[1] In retrospect, the military leaders of both Canada and the United States were correct in their initial appreciation that the highway would not be necessary for the defence of Alaska. That they changed their views must be attributed to the emotional climate of pessimism that swept the West in the wake of the unbroken string of Japanese victories in the early months of the Pacific war. The highway as it stood in the fall of 1943, when there was demonstrably no requirement for it for the needs of Alaskan defence, had an annual capacity of 400,000 tons, a figure which could have been increased to 720,000 tons in an emergency.[2]

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[1]Stacey, Arms, Men and Governments, p. 383.

[2]Dziuban, p. 222.

The military importance of the Alaska Highway lay in its relationship to the North West Staging Route. The highway played an important part in staging route construction programs an in the routine operation of the airway. By the end of 1943, the United States Army was operating over 1,500 vehicles on the highway, moving an annual total of 134,000 tons of supplies and 42,000 passengers. These figures remained more or less constant through 1944 and only diminished in 1945 with the end of the war.

The Canol Project

The Canol Pipeline is the third in the triumvirate of major defence projects undertaken in the Northwest during World War II.[1] Like the Alaska Highway, which in many ways it complemented, the project was a major feat of engineering undertaken on an intensive "crash" basis. In the end, it turned out to have a marginal impact on the defence of Alaska and an insignifican impact on the conduct of the war.

Canol, an acronym for CANADIAN OIL, had its origins in a United States War Department study of January, 1942, wherein the possibility of using oil from the Norman Wells field on the Mackenzie River was examined with respect to the military needs of Alaska and ongoing defence projects in northern Canada. The rationale that prompted this study and the eventual conclusions reached were, like the decision to build the Alaska Highway and improve the Northwest Airway, a product of the military appreciation of the situation as it existed in early 1942. The possibility of losing control of the marine route to Alaska, coupled with a critical shortage of tankers, provoked the American administration into proceeding with the project. On 30 April 1942, the United States

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[1]Dziuban; unless otherwise noted, all references in this section are from this source, pp. 228-235.

Army Chief of Engineers was directed to carry out the program. The following day the United States government signed a contract with Imperial Oil Limited, the owners of Norman Wells; and the Canadian government was notified informally of the American proposal! Negotiations for American construction rights were carried out via the classical diplomatic route, rather than through the PJBD.[1] As was usual, Canada, although concerned with sovereign implications and possible disadvantageous post war precedents, agreed to the American requests.

The main project, or Canol 1, as it came to be known, called for the drilling of nine additional wells at Norman Wells and the construction of a pipeline between the wellhead and Whitehorse, where a refinery was to be built.[2] Canol 2, subsequently authorized, was a pipeline leading from Skagway on the coast to the refinery at Whitehorse. This project permitted crude oil to be shipped by tanker along the relatively secure inside passage to the Alaskan panhandle and thence by pipeline to Whitehorse where it would be refined and used on the Alaska Highway or Northwest Staging Route. Canol 3 and Canol 4 were gasoline pipelines laid to distribute the product of the Whitehorse refinery, the former leading south to Watson Lake, the latter north to the Alaska boundary.[3] In quest for more sources of oil, the United States sought and obtained Canadian

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[1]The American secretary of the Board later said that the reason the United States Section never tabled the Canol proposals was that the American members did not wish to insult the Board with "such a fool idea". See Stacey, Arms, Men and Governments, p. 348.

[2]To establish the Whitehorse refinery, the United States government purchased an existing refinery in Texas, dismantled it, shipped it by sea to Skagway and thence by rail to Whitehorse where it was reassembled. Lyman L. Woodman, "Canol: Pipeline of Brief Glory", The Northern Engineer, Vol. 9, No. 2, Summer 1977. Woodman's article includes a detailed study of the engineering aspects of the Canol project.

[3]D Hist, 348.013 (D1), U.S. Defence in Canada, Canadian General Staff Memorandum, 11 July 1945.

authority to sponsor wildcat drilling throughout the Yukon and in the Northwest Territories.

With the exception of a few individuals in the higher levels of American government, virtually every public and private agency in both Canada and the United States, including senior American military engineers, expressed grave doubts as to the utility of the Canol project. The main tenor of their objections was that the system could not possibly be expected to produce enough oil quickly enough to have any significant effect on the course of the war.[1] In retrospect, these critics were absolutely right, for the originators of the project simply had no idea whatsoever of the engineering and transportation problems attendant upon the isolation of the Canadian Northwest. The first requirement given to the Corps of Engineers was to have the pipeline laid and the refinery in production by October 1942.

When the 1942 freeze up occurred, at about the same date that the Canol 1 was originally supposed to be in full production, less than two thirds of the materials needed to build the pipeline had even arrived at Norman Wells. This was in spite of a truly massive American construction effort by 2,500 troops and an additional 2,000 civilian workers. The Americans built wharf facilities, feeder roads, air strips, and construction camps all over the Northwest in aid of the Canol project but this had not been enough. The movement of equipment and material for the pipeline continued throughout the winter via winter roads bulldozed across frozen waterways and through snow covered woodlands. When the

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[1]Steffanson had recommended the development of the Norman Wells oil fields to the United States War Department in 1940 and again in mid 1941 as a defence measure, but no action was taken in the absence of the imperative of war. Woodman, "Canol", p. 16. Steffanson was notorious for underestimating the difficulties of northern development and operations to men less dedicated than he.

1943 shipping season opened, huge amounts of stores were still required to be moved north.

At the same time as the necessary equipment was being assembled in the Mackenzie Valley and in the Yukon, an extensive survey and reconnaissance was underway to determine the route the pipeline should take. This survey was not completed until May 1943, although actual construction of the pipeline was able to begin in December 1942. Work continued throughout 1943; at its peak, the work force numbered over 10,000 civilian construction workers. The pipeline was not completed until February 1944 and the Whitehorse refinery did not come on line until April.

On the whole, the Canadian government had little or no idea of the magnitude of the American enterprise. When rumors of the actual extent of operations began to leak out of the North, Canadian leaders uniformly reacted with shock and dismay. In far distant London, Vincent Massey of the Department of External Affairs (and the man destined to become Canada's first native-born governor general) learned from a senior officer of the Hudson's Bay Company that

> Large numbers of men have been discovered well established in certain parts of the North without Ottawa knowing anything about the matter at all or any permission having been asked or given.[1]

In the winter of 1944 Mackenzie King twice brought up the Canol project at War Committee meetings. The Prime Minister's chief concern was with the actual control of the oil wells, holding that "we ought to get the Americans out of the further development there and keep complete control in our own hands."[2]

If Canadian leaders were privately unhappy with the entire Canol

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[1]Vincent Massey, What's Past is Prologue (Toronto: MacMillan of Canada), 1963), p. 371.

[2]J.W. Pickersgill (ed), The Mackenzie King Record, Vol I 1939-1944 (Toronto: U of T Press), pp. 644-645.

project and distrustful of the ultimate intentions of the United States, the American Senate was also having serious second thoughts about the northern pipelines. The Truman Committee Investigating the National Defence Program criticized both the initial decision to launch the Canol project and later decisions, some made as late as October 1943, to continue with the project in the light of a vastly improved strategic situation in Alaska. The United States Petroleum Administrator for War viewed the project as being inordinately expensive in relation to the expected return. In addition, the Truman Committee concluded that the contracts negotiated with the Canadian government were unfair and failed to safeguard post-war American interests and investments!

Despite constant criticism, the United States War Department forged ahead, determined to complete the project long after their critics had proved to be manifestly right, and even the remotest strategic threat had passed. When production finally started, the Whitehorse refinery could only process 3,000 barrels of crude oil a day. As such, the output of gasoline, fuel oil, and aviation fuel could only partially meet the needs of the military operations by then taking place routinely along the Alaska Highway and the Northwest Staging Route.

Canol was to be as ephemeral as it was costly. In June 1945 the Whitehorse refinery was closed and soon after was dismantled and shipped back to the South. Neither the Canadian government nor any private enterprise could see any economic justification for the facility in terms of northern requirements during peacetime. Very few of the elaborate facilities that had been built to support the pipeline were of any use in the immediate post-war years. A few airstrips were subsequently developed to meet the needs of commercial and private aviation in the upper Mackenzie Valley. The main pipeline was abandoned. The wilderness

encroached on most of the airstrips and the service road that ran alongside the pipeline. Empty construction camps crumbled into decay; wharfs were swept away. Canol, at a cost of 134 million dollars, briefly opened up a remote area of the Canadian North. Since 1945, the North has reclaimed its own.

Crimson Route

A Trans-Arctic Airway between Europe and North American exerted a considerable fascination for air-minded people on both sides of the Atlantic during the 1930s.[1] The theoretical potential of the route was clearly understood, but given the state of aviation art, the problems presented by the route seemed to be insurmountable in terms of technology, cost, and reliability. It was desirable that no open sea crossing should involve a greater distance than 450 miles. The projected route led from London to Scotland and thence north to the Faroe Islands. From there the route envisioned aerodromes at Angmagsahik and Holstenborg on the east and west coasts of Greenland respectively, and on to Pangnirtung on Baffin Island, the first point of the route on Canadian territory. From Pangnirtung, there existed two alternatives: a westerly route via Chesterfield Inlet and Churchill on Hudson Bay, and on to Winnipeg; or a more easterly route going via Wakenham Bay in Hudson Strait, Whale River, Rupert House and Cochrane in northern Ontario.

While these routes met the requirements of the airway in terms of airfield interval, they also encompassed, from an aviator's point of view, particularly foul climatic conditions, including long hours of darkness

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[1]It should be noted that the Trans-Arctic Airway was only one of several means considered to link the two continents by air. A series of floating aerodromes located at intervals along the main North Atlantic shipping route remained no more than an idea. The possibilities of using rigid airships for commercial purposes seemed more promising; it was to take the Shenandoah and R101 disasters before this alternative was given up.

during winter, blizzards, sleet, fog, and critical temperatures condusive to aircraft icing. In addition, winter ice and varied times of break-up and freeze-up along the route meant that flying boats could not be used; ski and wheel equipped aircraft operating between prepared aerodromes were the only possible solution at the time. The cost of building such facilities in Canada during the 1930s was perceived as being excessive. In the final analysis, a commercial Trans-Arctic airway would have to present a fast and reliable alternative to the well established North Atlantic steamship route. As is often the case with pioneering ventures, reliability was the great question mark. In depression era Canada, the solution to the inherent problems of the route were not apparent.

Canada approached the Trans-Arctic Airway project with great caution. The British Watkins air expedition to Greenland to explore the eastern portion of the proposed route was watched with interest. Men of the RCMP stationed in the Eastern Arctic again proved their multi-purpose utility by gathering meteorological data along the Canadian section of the proposed route. Charles Lindbergh carried out a partial aerial survey of the route in 1933 on behalf of Pan American Airways, but his report was noncommittal and PanAm took no further action.[1]

The Canadian position was best summarized by an undated memorandum prepared by the Civil Aviation Branch, probably in 1936. It concluded

> (T)he route was only feasible for multi-engined aircraft using land bases. The preparation of these, together with the equipment of the route, presents great difficulties. Many of the bases would be inaccessible for many months of the year, which is an obvious drawback. Their inaccessibility makes the investigation expensive and difficult.
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> We felt that, while the route could probably be flown with fair regularity if properly equipped, yet, the difficulties of its operation and the cost of its maintenance, together with its inaccessi-

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[1]D Hist, 75/52, "Trans Arctic Airway" memorandum, 6 February 1932.

> bility, do not make it a practical proposition under present conditions.[1]

Nobody seems to have considered, even in the late 1930s, that conditions might change abruptly and an air route that was not a "practical proposition" as a commercial venture might take on a vastly more important role in war.

During the summer of 1941, both Canada and the United States had sponsored air expeditions along the Labrador coast to examine the possibilities of establishing a major air base at North West River.[2] Both groups had met at the site that was to become known as Goose Bay and agreed that it met the requirements. While Goose Bay was the main base, the need to ferry strategic and tactical aircraft from North American factories to the European theatre of war led to the construction of extensive airway facilities throughout Canada and Newfoundland. It was anticipated that a movement bottleneck would be created at the Newfoundland bases of Gander and Torbay particularly when massive numbers of USAAF aircraft began to deploy to Europe. The huge new facility that had been constructed at Goose Bay, Labrador in late 1941, was, in early 1942, still unpaved and unusable during the spring thaw. In addition to these problems, short-range fighter aircraft required bases that were more closely sited than those that the Newfoundland route provided.

The American 1941 air expedition had been commanded by Captain Elliot Roosevelt, the President's son. In the latter part of July he had proceeded further north and had located potential air base sites at Fort Chimo in Arctic Quebec, at the head of Frobisher Bay on Baffin Island,

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[1]D Hist, 75/52, "Arctic Air Route Between UK and Canada" memorandum nd. (1936 ?).

[2]Dziuban, pp. 193-194.

and on Cumberland Sound on the east coast of Baffin.[1] (Subsequent investigation revealed that Padloping Island was even more suitable than Cumberland Sound). On 9 August 1941, during the Atlantic Conference at Argentia, Newfoundland, the President had discussed these sites with his son and General Arnold, his senior air adviser, with a view to developing a ferry route for short-range aircraft.

Nothing could be done about air base construction at these remote sites during 1941 as the open water season was too far advanced. The United States did, however, request permission from Canada to construct meteorological stations at these sites to provide weather forecasts relevant to North Atlantic flying. Canada acceded to this request and the United States quickly deployed the necessary resources. By year's end, the three bases, code named Crystal, were all in operation with Crystal I at Fort Chimo; Crystal II at Frobisher Bay and Crystal III on Padloping Island.

By the spring of 1942, the anticipated air bottleneck was clearly developing in Newfoundland and Labrador. In May the United States presented a plan for what was to become known as the Crimson Project to the PJBD. Fiorelle La Guardia, the Chairman of the United States Section of the Board, saw the project as one of the most important subjects the Board had touched on saying: "The plan challenges the imagination. It is so gigantic and dramatic." He reported to the President that the magnitude of the proposal startled the Canadian members of Board. An unofficial Canadian opinion on the project, rendered by C. D. Howe, was that the Americans were perhaps underestimating the climatic difficulties

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[1]A detailed account of this expedition is to be found in Alexander Forbes, Quest for a Northern Air Route (Cambridge Mass: Harvard University Press, 1943).

that would be encountered in the construction and operation of the Baffin Island bases.[1]

On 9 June 1942, the PJBD convened to examine in detail the American proposal for the North East Staging Route. In the view of the United States Army Air Force, there would be a requirement, by 1943, for a series of aerodromes every four or five hundred miles, the whole system being capable of handling up to one hundred combat aircraft and forty transports a day. To this end, the United States proposed three alternative routes: an eastern route via Fort Chimo, Baffin Island, the east coast of Greenland, Iceland and on to Great Britain; a western route originating in Regina, Saskatchewan and going northeast via The Pas, Churchill, Southampton Island, and thence connecting with the eastern route at Baffin Island; and a central route, following the east coast of Hudson Bay by way of Moose Factory and Richmond Gulf to Baffin Island.

In the view of the PJBD the project held the promise of having a decisive effect on the duration of the war and in its 26th Recommendation, recommended taking action as soon as possible. Each country was to bear the costs of the airfields it undertook to construct, defend, and operate, but the proviso was added that all facilities built in Canada would become property of the Canadian government after the war.

If the magnitude of the project had staggered Canadian officials when it was first presented to them, it had similar effect on the United States Combined Chiefs of Staff Committee when they came to consider the logistic support and shipping requirements entailed by the construction phase. In the view of the American military leaders, Crimson would place an unacceptable delay in the build up of American forces in Europe and

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[1]Stacey, Arms, Men and Governments, p. 375.

they recommended that the project be dropped unless the shipping requirements could be considerably reduced. A modified plan was eventually approved by the United States military on 2 July 1942. In its final form it called for only three permanent airfields at The Pas, Churchill, and Southampton Island. An additional three winter strips were to be built at Fort Chimo, Frobisher Bay and on the east coast of Greenland. The "central route" was abandoned completely. Canada, faced with the perennial problems of limited resources, and with heavy on-going commitments to construction on the North West Staging Route and at Goose Bay, stated that she would only be able to build the field scheduled for The Pas. The Eastern Arctic became the responsibility of the United States.

Work on all five fields in Canada went ahead with surprising speed. By the end of the year, usable strips had been built at every site and construction of housing and other support facilities was progressing well. In addition to the main sites, the United States built a feeder base at Mingnon, Quebec, and undertook the construction of thirty meteorological stations throughout the Eastern Arctic and the northern portion of the central provinces to support the system.[1]

By the spring of 1943, the steadily improving allied situation caused the United States War Department to reconsider the entire Crimson project. The ever increasing range of successive technological generations of fighter aircraft negated the need for relatively closely spaced bases, and it was also proving possible to deploy large numbers of disassembled aircraft to Europe using regular North Atlantic shipping. As a result, the United States felt that it would be reasonable to modify and reduce Crimson considerably. The exact nature of these modifications,

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[1]Dziuban, pp. 193-194.

however, was a matter of some indecision, and it was early summer before negotiations between the two governments were complete. In the interval, work continued on all sites. The final result was that the eastern route bases at Chimo and Frobisher were designated as emergency strips to be used in the event that it became necessary at some later date to deploy large numbers of aircraft quickly to Europe.[1] To this end, these far northern strips were paved. Work on the sites at Southampton Island, Churchill and The Pas that was more than fifty percent finished was pushed through to completion and facilities were maintained at all sites to support flying operations. The meteorological net was modified by closing down some stations, but at the same time other new ones were opened.[2]

Crimson Route was never used for its designed purpose. At the most northerly bases, aircraft were few and far between. Fort Chimo recorded 85 landings in 1943 and seven in all of 1944: most of these were by ice patrol aircraft working in support of shippling related to the construction of the bases. A total of 323 aircraft landed at Frobisher Bay during 1943, almost all of them for the purposes of supporting construction activities. In the words of the official United States Army historian, "an insignificant number of ferry aircraft passed through these bases."[3] Although the bases had manifestly no role to play in the war effort, what to do with them remained a perplexing problem to the governments of both countries.

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[1]There is an oft expressed statement in the popular press that Crimson Route was built to facilitate the air medical evacuation of the heavy casualties that were expected as a result of the invasion of Europe. No official documents on the subject could be located by the author that suggested even remotely that this was ever a real purpose of Crimson Route.

[2]D Hist, Chiefs of Staff Committee Memoranda, (D22), Vol. 21, 5 August 1943.

[3]Dziuban, p. 194.

The United States had attempted to shift the control responsibility for The Pas, Churchill, and Southampton Island to Canada in early 1943 when the first major reevaluation of the project was undertaken. The Canadian Chiefs of Staff Committee was still studying the proposal when the United States again changed its mind about future development. With respect to the original request, the Canadian view was that the most southerly base, The Pas, should be taken over by Canada; that the United States should maintain its commitment at Churchill, and that Southampton could be abandoned, providing that, as a precaution, the runway was made unserviceable.[1] In the fall of 1944, the United States again considered the abandonment of the route,[2] and the Canadian government again considered what to do with the facilities. In the summer of that year, several departments of the federal government conducted a joint exploratory flight over the Crimson Route

> for the purpose of obtaining information regarding the usefulness of the bases and any other information which will assist in assessing the future value of the Route.[3]

Several reports were submitted to the Cabinet War Committee on the subject. The Canadian Chiefs of Staff agreed that from a defence point of view, the bases at The Pas, Churchill, and Southampton Island were not required, but that they should be maintained by the Americans on a caretaker basis until such time as the aircraft ferrying requirements for the Pacific war became clear. The issue was still dragging on when the war ended in Europe. On May 19, 1945, a Canadian staff study stated that "there is no military value to the aerodromes at Chimo and

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[1] D Hist, Chiefs of Staff Committee Memoranda, (D20), Vol. 19, 14 Jun 1943.

[2] Ibid. (D36), Vol. 35, 5 October 1944.

[3] D Hist, 181.009 (D1062), Northeast Staging Route Exploratory Flights, 26 July 1944.

Frobisher Bay" and recommended that no attempt should be made by the Department of National Defence to maintain either of the stations or Southampton Island.[1] Finally, in August 1945 The Pas and Churchill were turned over to the Canadian Department of Transport while Southampton Island was transferred in September. The United States, however, kept small caretaker detachments at Frobisher and Chimo until the winter of 1949-50.[2]

The Crimson Project in the Eastern Arctic was closely analagous to the three United States defence projects in the Northwest. All were conceived and approved in the early months of 1942. All were eventually used for purposes other than that which their designers had originally intended. All brought a relatively massive United States military presence to the sparsely settled Canadian North.

Impact and Aftermath

The main purpose of all the Second World War northern defence projects was to permit the United States to bring its military power to bear on distant lands. Faced with a common foe, Canada often "went along" with American projects for the sake of allied co-operation and in order to "protect" her sovereign rights. In permitting what was, in the final analysis, a foreign power to undertake major construction projects using American troops, American contractors, and American materials, Canada, to a degree, gave up some of her sovereign authority over her own territory but maintained an apparent ultimate control. These projects are all amenable to concrete measurement--the number of aircraft delivered to Russia, the number of barrels of oil pumped, etc. The sacrifice of

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[1]D Hist, Chiefs of Staff Committee Memoranda, (D43), Vol. 42, 18 May 1945.

[2]Stacey, Arms, Men and Governments, p. 377.

sovereignty in the interests of a common cause is unquantifiable.

The attitudes of officials of both countries towards the matter of sovereignty differed considerably. As a broad generalization it could be said that American defence planners involved in northern projects, and American troops involved in their execution, were not concerned in the least about this sovereignty factor; their sole interest was the efficient prosecution of the war. Canadians, on the other hand, tended to be extremely suspicious of American motives. Canadian officials were continuously examining American proposals in the light of anticipated post-war political, economic, and commercial factors. These differing attitudes caused certain difficulties in Canadian-American wartime relations, and they were particularly acute in the North where the Canadian infrastructure and presence was at its weakest, and the American involvement was at its greatest.

Three of the four main military construction projects: the Alaska Highway, Canol, and Crimson were exclusively American. Even the North West Staging Route, despite the fact that it was constructed by Canada, and operated by the RCAF, was run for the benefit of the United States, and, during 1943, relied heavily on American construction teams who were building the necessary improvements and enlargements. The Liberal government of Mackenzie King was quick to seize opportunities to emphasize Canadian sovereignty and to reassert Canadian control over American projects. At the official opening ceremony of the Alaska Highway, held at Soldier's Summit on 21 November 1942, both the message of congratulations sent by Mackenzie King, and the speech by the cabinet minister who attended the ceremony emphasized the Canadian "contribution" to the project and reiterated the fact that the highway had been built on Canadian territory. The Prime Minister's message read, in part, that

Canada's

> unprecedented action in granting the United States permission to build the road across Dominion territory was another symbol that we are brothers in arms, waging a life-and-death struggle against a common enemy.[1]

Ian Mackenzie, the cabinet minister was somewhat less subtle. He said that "the soil is ours, the toil has been yours." He emphasized that the highway was just a part of the Alaskan route and that the Northwest Staging Route was the other half. In his words, "We have built the sky-way--you the highway." Somewhat ungraciously on that, the official opening of the highway, he went on to extol the anticipated post-war importance of the airway.[2]

Mackenzie King saw American projects as an attempt to link Canada more closely to the United States at the expense of Canada's relationship to the British Commonwealth just as he saw British attempts to involve Canada in South East Asia as efforts to tie Canada more closely to the Commonwealth at the expense of the American connection. An impolitic suggestion by the United States that a joint international committee be formed to study the territory opened up by the Alaska Highway was objected to by the Prime Minister. On 30 December 1942 he wrote in his diary that he was "strongly opposed to anything of the kind" seeing such a project as the first step of "the efforts that would be made by the Americans to control developments in our country after the war."[3]

Canadian concern over sovereignty in the North continued to grow as the war progressed and American involvement in the area increased. In early 1943, the British High Commissioner to Canada, Malcolm MacDonald,

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[1]Reported in Vancouver Province, 22 November 1942.

[2]Ibid.

[3]Mackenzie King Record, Vol. II, p. 436.

visited the Northwest, and was later invited to inform the Cabinet War Committee of his impressions of the situation there with respect to American activity. MacDonald painted a gloomy picture about the situation vis à vis Canadian sovereignty. He observed that the scale of the American projects could not be imagined without actually seeing what was going on, adding that the few Canadian officials in the area could not maintain control, or even keep touch with day to day developments. More ominously, he stated that he felt the American defence projects were being planned and carried out with a view to the post-war situation.[1]

In April 1943, the Deputy Minister of Mines and Resources, Dr. Charles Camsell, was directed to study and report on the situation in the Northwest. Basing their decisions on Camsell's report, the Cabinet War Committee resolved that in future all subsequent programs in Canada involving the United States defence establishment would be the subject of specific agreement between the two countries; that Canada participate as fully as possible in the actual program of development; and that a special Canadian commissioner be appointed to oversee all military activity in the Northwest. On 5 May 1943, Brigadier W. W. Foster was named Special Commissioner for Defence Projects in the Northwest. Included in Foster's instructions was the sentence:

> The Canadian Government desires to ensure that the natural resources of the area shall be utilized to provide the maximum benefit for the Canadian people and to ensure that no commitments are made and no situation allowed to develop as a result of which the full Canadian control of the area would be in any way prejudiced or endangered.[2]

The United States regarded this appointment of a Special Commissioner as a measure taken by Canada to simplify liaison and to centralize

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[1] Stacey, Arms, Men and Governments, p. 386.

[2] Ibid.

Canadian authority in the area--it certainly had that effect.[1] There can be no question that the real purpose of the Canadian Government was to provide for better Canadian control over American activities and more effective protection of Canadian sovereignty.[2] Nevertheless, despite these steps, Canadian apprehension continued. In March 1944, the Prime Minister wrote in his diary that he thought that

> we ought to get the Americans out of the further development (in the North) and to keep complete control in our own hands . . . . With the United States so powerful and her investments becoming greater in Canada, we will have a great difficulty to hold our own against pressure from the United States.[3]

By 1944, the great construction projects that had been undertaken with so much military urgency in 1942 were in the main completed, or, at least, the military construction phase had ended. In most cases, however, the remaining work had been turned over to civilian contractors, and there still remained a sizeable defence sponsored work force in the North. Changes in the strategic balance also served to lessen the importance of the area. The Japanese had been expelled from the Aleutians and the security of Alaska was no longer an issue. The United States had been prepared to abandon Crimson Route in 1943, and only continued the project on the possibility that the route might have some role to play in the redeployment of forces after the end of the war in Europe.

At the level of the PJBD, and in concerned government departments in both national capitals, officials began to consider the problem of post-war disposition of defence facilities in the Canadian North. In some cases, the original international agreement had been specific as to the future of any facility. The Alaska Highway, for example, was to be turned

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[1]Dziuban, pp. 137-138.

[2]Stacey, Arms, Men and Governments, p. 386.

[3]Makenzie King Record, Vol. I, p. 644.

over to Canada six months after war's end, although Canada was in no way committed to its subsequent upkeep, and in 1944, the post-war role of the highway was by no means clear.

The future of the various airways was seen as being much more important. Intercontinental air routes from the United States to both Europe and the Orient involved the use of the Canadian air space and aerodrome facilities. Officials in both countries anticipated that the war-time staging routes would have a key role to play in peace-time civil aviation; both sides were suspicious of the other's intentions. Canadians feared that the United States would use its war-time position as the basis for a future claim to operating rights. This feeling was heightened in Canada by the fact that American commercial carriers were operating in the Northwest on charter to the United States War Department and Navy Department. On the other hand, Mackenzie King had stated that Canada intended to use her geographic location to full advantage in developing post-war civil aviation.[1] The PJBD's 32nd Recommendation reconfirmed Canadian control over the Northwest Staging Route. Flight strips associated with Canol and the Alaska highway were seen as having only a local or emergency utility and remained under American control as did Crimson Route, also seen as being unimportant to future civil operations because of the extreme northern location of the bases. It is important to note that interest in the future use of the airways was in terms of civil aviation, and not for any future military role. In 1943-44, Canadian and American political and military leaders were not thinking in terms of the possibility of rivalry with the Soviet Union.

The actual transfer of defence facilities from the United States

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[1]Dziuban, pp. 303-304.

to Canada was a gradual process that took several years, starting before the war's end and continuing well into the Cold War period. Canol flight strips on the Mackenzie River were turned over to the Department of Transport in November 1944. From October 1944 to April 1946, the United States gradually turned over facilities it was using on the Northwest Staging Route. The aerodrome facilities at Churchill and The Pas were abandoned by the United States in August 1945, as was the Southampton Island base the following month. The more northerly bases of Fort Chimo and Frobisher Bay were retained by the United States until October 1949 and September 1950 respectively. Canada took over control of the Alaska Highway in April 1946. The Canol facilities were dismantled in bits and pieces and sold to various commercial firms between 1946 and late 1947.

The military activity associated with the North during the Second World War is best seen in terms of the "boom and bust" phenomenon which has historically been so common in the region. There are two aspects to the issue: the impact of the actual construction and wartime operation phases, and the importance of the permanent facilities that remained at war's end. Those construction projects that touched or passed by northern communities brought short-term economic prosperity in their wake for those who had skills or services to offer to the builders. No consideration was given at the time to environmental impact or native land rights and cultural identity. In the absence of detailed studies on these latter two issues, one can only generalize and say that the results of the defence projects were probably negative, but in what way and to what degree remains unknown. The long-term results of the northern projects are somewhat easier to measure. The great expectations associated with the northern airways failed to materialize. War inspired aviation technology

developed so quickly, particularly with respect to the range of multi-engined aircraft, that there was ultimately no need for the closely spaced bases of either the North West Staging Route or Crimson Route. The various landing fields became important to local and regional air services, but, with one or two minor exceptions, played no subsequent part in trans-continental aviation. The Alaska Highway turned out to be the most important of the war-time ventures to subsequent northern development, but even then, the great population rush and industrial development that many "northern optimists" forecast during the war did not develop. Growth occurred, much of it made possible by the existence of the highway, but this growth was slow; setbacks were as common as successes in the realm of commercial ventures in the area. Revenue from tourism in northern British Columbia and the Yukon became an important economic factor to Canadians who made their homes in the area, but by the standards of a Yellowstone Park, a Niagara Falls, or a Disneyland, northern tourism remained at a very modest level. Canol, given a comparison of costs and results must, in truth, be put down as a 134 million dollar fiasco.

At the end of six years of war, Canadians knew a bit more about the North than they had previously. Americans, in comparison, know much more. Permanent facilities, in the sense that they formed a transportation grid contributed to future development. The size and isolation of the North had again underlined the fact that development of any sort would represent a massive and costly engineering effort, and if Canada could not undertake such projects on her own, there would be serious implications for national sovereignty in the area. The North itself had yet to prove that it had any great intrinsic value to the nation.

CHAPTER VI

NORTHERN APPROACHES

The Defence of a Strategic Frontier

The Aerial Defence of North America

When Canadian and American planners were formulating their joint defence schemes in 1941 before the United States entered the Second World War, they thought exclusively in terms of "both coasts", the Atlantic and Pacific. The fact that North America had an arctic coast was ignored. A scant two years later, the United States was building a line of northward facing radar stations across northern Ontario. Canada was organising the Central Canada Aircraft Detection Corps with detachments at 700 points across the central provinces. At Sault Ste Marie, the United States was deploying unit after unit of anti-aircraft artillery, military police, engineers, and fighter squadrons while Canada contributed a heavy anti-aircraft battery under American command. This massive, and, in retrospect, excessive reaction on the part of the United States, with Canada meekly following along, had but one purpose: to defend the locks at the Sault against an Axis attack mounted from the Canadian North.[1]

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[1] In an average year the locks at Sault Ste Marie between Lake Superior and Lake Huron handled a greater tonnage of shipping than did the Panama, Suez, and Kiel Canals combined. Ninety per cent of American iron ore destined for eastern smelters as well as vast quantities of wheat passed through the system. The locks certainly formed a lucrative strategic target. Post war investigation has revealed that no Axis power ever even considered a bombing attack or "suicide" raid by paratroops into the heartland of North America, let alone such a venture mounted through the desolate wasteland of the Canadian North. The Sault defence project is best viewed in terms of an understandable reaction to the precedent of

In post war North America, consciousness of the vulnerability of the continent to attack from the North became a major consideration in defence planning. Many factors combined to create this new frontier: knowledge of the use to which the North had been put during the course of the war, greater familiarity with the North itself arising out of those defence projects, and the changed international scene. Greatest of all, however, was the development of aviation technology. The advent of aircraft that could carry out intercontinental attacks by using the polar route focused the immediate post-war attention of military men, scientists and statesmen on the North. Once attention was focused, a host of problems and relationships were identified, with a rigorous analysis following closely on the heels of identification. To North Americans, the "northern approach" became a reality.

Interest in, or concern for, the North did not equate to understanding or knowledge. Defence planners had to come to grips with many notions before realistic programs could be undertaken, notions such as the use of polar projection maps for strategic planning; the deeply imbued North American popular image that "north" equated to "cold" or "winter"; the differing strategic implications between the North as a battleground in itself and north as a direction of approach to the heartland of the continent. Inevitably, theoretical speculations tended to be coloured by experience.

During the interwar years, the apostles of strategic air forces,

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Pearl Harbour. Having been bitterly surprised once, the United States did not intend to be caught again--and military resources were readily available as the United States girded itself for total war. Both American and Canadian official historians discuss the defences at the Sault in considerable detail. See Dziuban, pp. 194-198; and C. P. Stacey, Six Years of War: The Army in Canada, Britain and the Pacific, Official History of the Canadian Army in the Second World War, Vol. I, (Ottawa: Queen's Printer, 1966), pp. 158-159.

Douhet in Italy, Mitchell and Seversky in the United States, and Trenchard and Liddell Hart in Great Britain, developed theories of strategic bombing. In its extreme forms, these theories maintained that air power alone could destroy a state's means and will to fight. The events of the Second World War, particularly the American and British bomber campaigns against Germany, and the American operations against Japan, proved the theorists, in a large measure, to be wrong. British and American air force leaders seriously underestimated almost every aspect of bomber force capability including the amount of physical damage that could be inflicted by a given weight of bombs, navigational accuracy, the degree of destruction necessary to neutralize an area, the effectiveness of anti-bomber defences, and the resiliance of the civil population. Bombers, it appeared, were not the ultimate answer to war. The attacks on Hiroshima and Nagisaki changed the entire picture. Thousand bomber raids in air campaigns that lasted months, if not years, would now no longer be necessary. Whereas during the Second World War a bomber loss rate of ten per cent was thought to be unacceptable, the same bomber fleet, armed with nuclear weapons could suffer a fifty per cent loss and still accomplish the aim of the mission. It was widely realized in both military and civilian circles that North America was vulnerable to an attack over the North Pole. As relations with the Soviet Union deteriorated in 1946, a wave of immediate concern swept the United States and to a lesser extent, Canada. Much of this concern now appears to have been ill-founded.

The basis of Soviet strategic bomber fleet was not established until early 1945 when an American B29 "Superfortress" force-landed in Soviet territory, thus providing the Soviet Union with a gratuitous, if unintended, strategic bomber prototype. To suggest, prior to 1949, that

the Soviet Union might attack the United States with a puny, by World War II standard, fleet of bombers on a one-way mission with conventional bombs, was fantastic. Yet the suggestion was made and often repeated in the press. Starting in 1946, reports of plans for massive defence projects in the Canadian North flooded the newspapers of both Canada and the United States. Numerous radar and fighter bases, along with protective army garrisons were projected.

An article appearing in the Chicago Tribune identified the issue in a rather alarmist and spectacular fashion, but the basic points of the story were accurate. It was reported that "members of a military mission for Alaska" had said that:

> the entire concept of arctic defence is based upon current or imminent developments in high speed bombers, in supersonic rockets and guided missiles, and radio controlled pilotless aircraft. Long range air operations are so routine today that trans-polar flights are considered to be within the capabilities of the air forces of any great power.
>
> The arctic has been picked as the shortest aerial distance between the United States and any other nation in the northern hemisphere that might have technological know-how permitting it to engage in a war with this country. A 3,000 mile flight from an advanced arctic base on the continents of Europe or Asia could strike to the manufacturing heart of North America.

The article then went on to state that the United States intended to construct a radar picket line and interceptor rocket and fighter bases roughly along the arctic coast of Canada. It was also reported that these "steps are being taken in conjunction with authorities responsible for Canadian defenses . . . ."[1]

In North America, several concepts coloured strategic thinking in the early years of the Cold War. During this period air power was seen as being the dominant component of military force. Sir John Sessor argued

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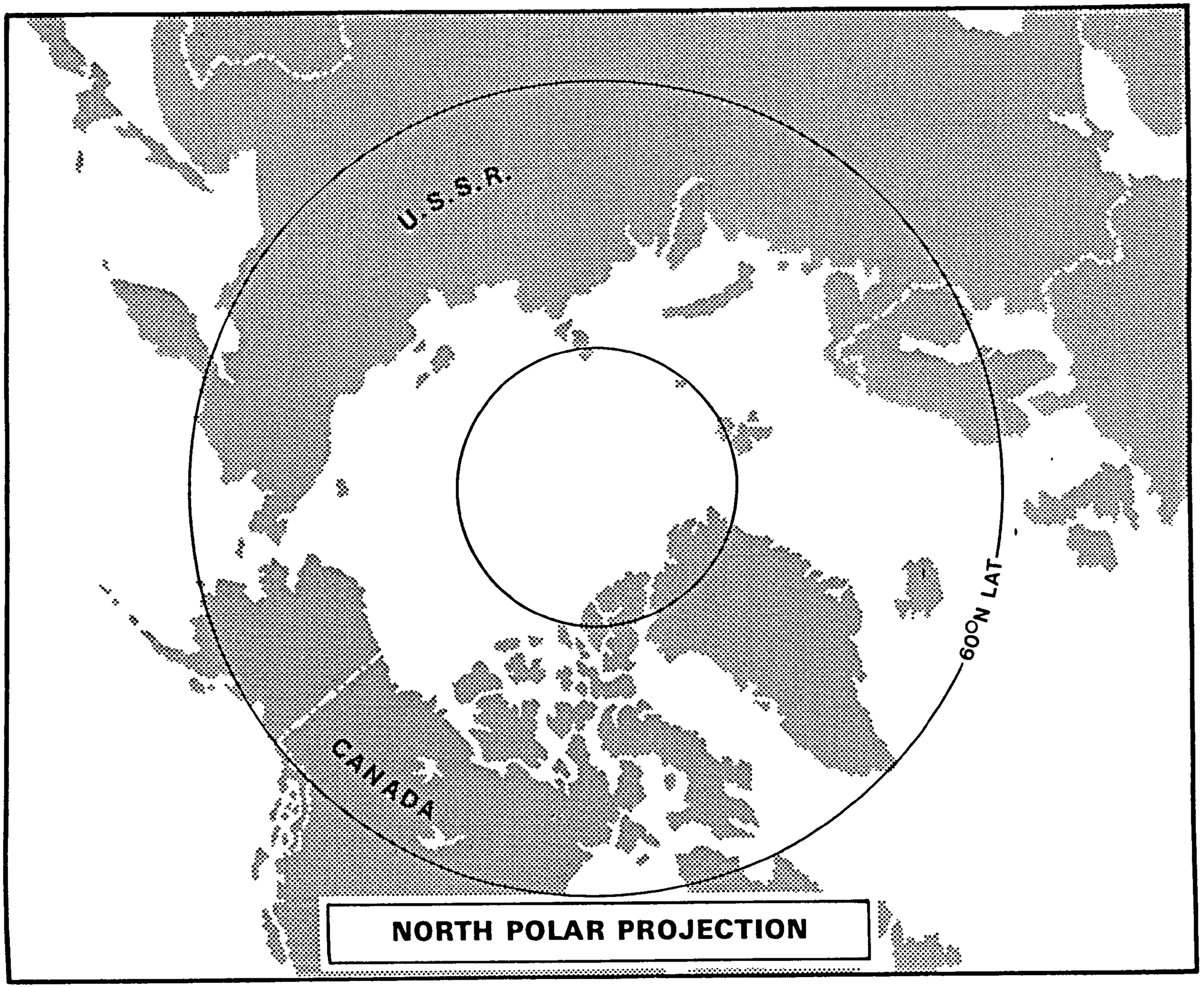
[1]Chicago Tribune, 19 January 1947.



NORTH POLAR PROJECTION

that Mackinder's notion of the impregnable Russian heartland was no longer valid since "air power has turned the vast spaces that were her prime defence . . . into a source of weakness". A. P. de Seversky rejected the mercator map and used the polar projection map in expressing his ideas. Many other military thinkers seized on this approach, emphasizing the global proximity of the two super powers across the polar basin. Another concept that was tremendously popular and often referred to, was Steffanson's notion of the arctic basin as the "new Mediterranean".[1]

Inevitably, the defence policies of Canada became increasingly involved with those of the United States. Sandwiched between two hostile super powers, Canada was in the unenviable position of having to seek defence accommodation with the United States, no matter what the issue might have been. The disproportionate strengths of the two North American allies resulted in Canada, as often as not, playing a supporting or subordinate role in the defence of North America. The important notion here is embodied in the expression "defence of North America". In terms of polar defences against the emerging Soviet bomber threat, it was impossible to differentiate between the interests and security of the two nations.

The Canadian government was less concerned with the Soviet threat than it was with the strong rumour that the United States was interested in establishing bases in the High Arctic, and that Canada was under considerable pressure to agree to the program. Public speculation was also made that northern defence works were required and if Canada did not cooperate, the United States would take unilateral action to protect her own interests and establish the bases anyway with a consequent loss of

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[1]A useful summary of early Cold War strategic analysis is Stephen B. Jones "Global Strategic Views", The Geographical Review, Vol. 45, No. 4, October 1955, pp. 500-505.

Canadian sovereignty over the area.[1] In order to quell the resultant public clamour, the United States and Canada issued a joint statement in February 1947 wherein the principles of post-war defence cooperation were delineated. The document provided for general cooperation relative to developments of common interest, mutual availability of military facilities in each country, and a vague statement of intention to standardize equipment and methods. More important than the document itself were the accompanying statements made by leading members of the Canadian government. Mackenzie King was at some pains to quash rumors of American bases and American pressure on Canada:

> The subject (of northern Defence) has naturally engaged the attention of many people both here and abroad and some quite unfounded suggestions have been put forward. There is a persistent rumour, for example that the United States Government has asked for bases in the Canadian North. This is a rumour which I should like to deny emphatically. There has been talk of Maginot Lines, of large-scale defence projects, all of which is unwarranted and much of it fantastic.[2]

The Secretary of State for External Affairs, Louis S. St. Laurent, the future prime minister, spoke to the same effect later in February in New York claiming that

> . . . (I)t was quite absurd to suggest, as some imaginative people have done, that your government was applying some sort of pressure in order to take over responsibilities (for defence) in Canadian territory.[3]

While the Canadian government denied that great works were planned for the

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[1]R. J. Sutherland, one of Canada's few bona fide strategists has observed that "The existence of (the great American air base at Thule, Greenland) has had a significant effect upon the military importance of the Canadian Arctic and upon Canadian-American relations. If Thule had not been available to the United States the question of a major US base in the Canadian Arctic Archipelago would certainly have arisen." See R. J. Sutherland "The Strategic Significance of the Canadian Arctic" in The Arctic Frontier.

[2]Cited in W. Eggleston, "Strategy and Wealth in Northern Canada", Queens Quarterly, Vol. 54, No. 2, 1947, p. 241.

[3]Cited in Ibid.

North or that there would be extensive involvement of American troops in the area, the Prime Minister admitted that in future

> When we think of defence of Canada, we must, in addition to looking east and west, as in the past, take the north into consideration as well.

The Prime Minister went on to outline a plan in which he saw defence and northern development being ultimately linked:

> Our defence forces must, of course, have experience of conditions in these regions, but it is clear that most of the things that should be done are required apart from considerations of defence.[1]

Mackenzie King had in mind improved mapping and weather reporting as well as more and better aviation facilities. He felt that communication in the North should be improved. By learning about and developing the North, the Canadian leader felt that the national interest would be served as well as the more narrow military interest.[2]

In the 1948 May Day Parade the Soviet Air Force had displayed several long-range bombers. The following year the Soviet Union's first atomic device was detonated. By 1950 Eastern Europe and mainland China had come under what was seen in the West as a communist hegemony and the Korean War had started. To North American defence planners, the USSR now unquestionably had the capability, and, it was suspected, the intention to attack the United States and by association, Canada. In the face of this crystallized threat, it became obvious that something more than

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[1]Cited in Ibid, p. 244.

[2]James Eayrs has observed that when the British government called for Imperial defence in the 1880s, Canada's response was to offer to build the Canadian Pacific Railway. In the late 1940s when a potential strategic threat in the form of Soviet bombers was perceived, Canada offered to undertake a modest program of northern research and development. It is understandable that this Canadian national characteristic of being relatively unconcerned with the needs of national defence during time of peace, may, upon occasion, severely frustrate allies and friends. See James Eayrs, In Defence of Canada, Vol. III.

Mackenzie King's northern research and development would be required to assure the security of North America.

In summary, the emergence of the Soviet Union as a potential aggressor and the development of aviation technology and nuclear weapons forced North American defence planners to accept "the psychological failure of the Mercator projection map".[1] In turning to the polar projection map, it was revealed that the shortest distance between Siberia and the United States was over the Canadian North. As one Canadian officer wrote

> It has taken the electric atmosphere of a world braced for the shock of mankind's most destructive war to drive home the realization that Canada has breadth as well as length, and that this second dimension may have some strategic significance.[2]

Robert Logan had said as much in 1922.

The air defence of the United States and Canada which was the subject of high priority studies of the late 1940s became the object of major construction projects in the early 1950s. Two continent-spanning radar arrays were built: The Pine Tree Line running roughtly along the international frontier, the 49th Parallel of Latitude, and the Mid Canada Line extending along the 55th Parallel. The former was a joint Canadian-American venture while the latter was an exclusively Canadian facility. Although these systems provided a modicum of early warning and interceptor control, it was soon evident that yet another radar line would be required in order to extend warning time.

In the late 1940s and early 1950s, it was thought that the most likely targets of Soviet bombers would be the industrial centers of the United States, and, to a lesser degree, of Canada. By 1952, however, the

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[1]Rear Admiral Lepotier, "The Strategic Importance of the Arctic Sector", Revue de Défense Nationale, January, 1947.

[2]Maj J. E. G. de Domenico, "The Strategic Importance of Canada's North", Canadian Army Journal, Vol. 14, No. 4, Fall, 1960.

American strategic consensus was that the rational target for the Soviets would be the heavy bomber wings, by then located in the main, in the heartland of America. Were Soviet bombers to destroy the American strategic bombers on the ground in a surprise attack, the Soviet Union, so the theory went, would be in a position to dictate terms to the United States under a threat of nuclear bombardment, without fear of retaliation in kind.

In 1952, a scientific study group concluded that the then existing air defence system could not prevent a mass attack from crippling the United States by striking at selected strategic targets. A warning system restricted to the border of the United States would provide less than one hour's warning of an imminent attack. The group recommended the establishment of a distant early warning line in the Arctic designed to provide from four to six hours warning of attack. Bell Telephone Company was contracted to develop the necessary system and by the end of 1953, technical answers had been found for the myriads of possible electronic, communications, and logistic problems that were facing the builders.[1] In 1954 an experimental station was opened in northern Alaska; its success proved the basic workability of the plan and in December of the same year, a contract was let to Western Electric Company to build the Distant Early Warning (DEW) Line between Cape Lisburne, Alaska and Cape Dyer on Baffin Island, running roughly along the 70th parallel of latitude.

Since it was proposed to locate the majority of sites in Canadian territory, it was necessary, before proceeding any further, to obtain the concurrence of the Canadian government. The matter was discussed at the still-operative PJBD, and on 5 May 1955, both countries exchanged notes

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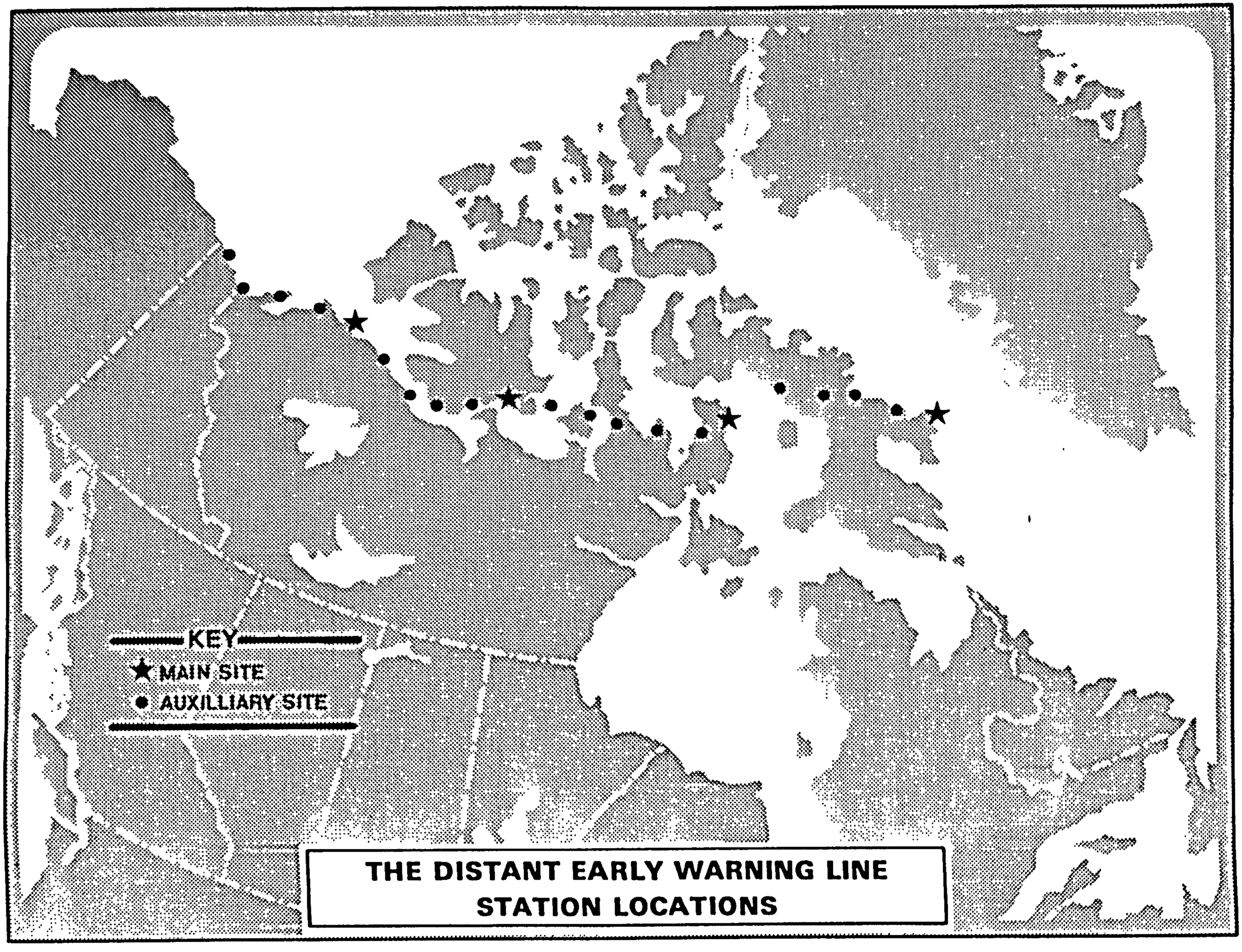
[1]Press handout, "Joint Press Tour Distant Early Warning (DEW) Line" 26 March, 3 April 1956.



THE DISTANT EARLY WARNING LINE
STATION LOCATIONS

covering the agreement. Canada had indicated earlier that she wished to participate in the project in some manner; her eventual contribution was limited, during the construction phase, to

> give assistance to the United States authorities in organizing and using Canadian resources, and to helping by making available the facilities of the armed forces and other agencies of the Canadian government when appropriate.[1]

Canadian participation in the operation and maintenance phase was to be decided upon at a later date.

Responsibility for the project was vested with the United States, but Canada proposed, and the United States accepted, numerous clauses relating to the conditions under which the line should be built. From the detail and number of these clauses, it is evident that the Canadian government was concerned over the possible ill-effects that the project would have on sovereignty in this remote area and was taking steps to ensure that some modicum of Canadian control was maintained. It is likely, also, that Canada wished to avoid a repetition of the World War II situation where for a time the government had only the vaguest idea of what the Americans were doing in the Northwest and in the Eastern Arctic.

In terms of the engineering problems, numbers of men involved, levels of support required, and cost, the construction of the DEW Line was the greatest engineering project yet to take place in the Canadian North. Like other "crash" defence projects the United States had undertaken in the North, the DEW Line contract called for speed; the system was to be in operation by the summer of 1957. Since the Alaskan portion of the system had been operational since 1953, the work between 1955 and 1957 focused on the Canadian sector. The requirement was to build four main

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[1]Canada, Treaty Series 1955, No. 8. Defence, Establishment of a distant early warning system, (Agreement between Canada and the United States of America), (henceforth DEW Line Agreement), p. 2.

sites, eighteen auxiliary stations, twenty intermediate posts and one communications relay facility.

The bare statistics of the construction phase give an idea of the magnitude of the effort. Sites required precise survey, construction camps had to be built, and workers and materials assembled on the sites. Lastly the complexes themselves had to be built. At the peak of construction, 25,000 men were employed on the project. Survey teams travelled more than a million miles in selecting sites and access routes. Almost a half million tons of goods had to be moved into the North by convoy during the summer shipping season and by air at other times. Fifty thousand aircraft flights were made in support of the construction phase, 75 million gallons of petroleum were used, and almost a billion tons of gravel. Over one million formal tests were made on the intricate equipment of the system before it was pronounced ready for operation in July, 1957.[1] Operation of the line was entrusted to the Federal Electric Company, the service division of the mammoth International Telephone and Telegraph Corporation.[2] Using a commercial firm to run a major military installation was an innovative, and on the whole successful idea. (A labour dispute in 1964 was settled without a strike).[3] Federal Electric ran the system for the United States Air Force, and the USAF stationed officers at the main sites throughout the Arctic. The auxiliary and intermediate sites were manned exclusively by the civilian employees of Federal Electric. Many of these civilian technicians and support staff were Canadians and Canadian commercial aviation and shipping companies resupplied the sites. Despite this

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[1] "Welcome to the Distant Early Warning Line", visitors' handbook 1973.

[2] H. La Fay, "DEW Line Sentry of the Far North", The National Geographic Magazine, Vol. 114, No. 1, July 1958.

[3] Montreal Star, 24 September 1964.

Canadian content, from the very beginning of the project there were major objections in Canada to the implications of the DEW Line, a USAF installation, to Canadian sovereignty.

The Canadian government had been at some pains to safeguard sovereignty when the original agreement was drawn up. Canada retained title to all sites in the Canadian portion of the system, and insisted upon the right of inspection of work and consultation on any changes of plans. RCMP Constables and Northern Service Officers were stationed on several construction sites to ensure that the regulations relative to intercourse with Eskimos and game laws were adhered to. The United States agreed to transmit to Canada, geological, hydrographical and other scientific data obtained in the course of the construction and operation of the line. The agreement also included an important clause relative to landing facilities at beaches and airstrips--both were to be available for use to the ships and aircraft of the government of Canada. The United States was prohibited from using the airstrips for any activity, other than DEW Line support, without Canadian agreement. Canadian civil air carriers were to be allowed to use the DEW Line airstrips when such use did not conflict with military requirements, but the USAF in this specific matter, was permitted to have the final say on any arrangement.[1]

Despite all these measures, many Canadians retained grave doubts as to the ultimate cost in terms of sovereignty, that the DEW Line would bring. Ralph Allen, the editor of Maclean's Magazine in a major article asked, "Will DEW Line cost Canada its northland?" His conclusion, like that of many other commentators, was that loss of sovereignty was quite likely unless Canada were acutely attentive to the situation and took some

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[1] DEW Line Agreement, p. 6.

positive steps to assert control. Allen felt that Canada had traded off her whole northern frontier for while "in law we still own this northern frontier, in fact we do not".[1] What bothered Allen was the size of the American enterprise. He looked at it as a "U.S. military base 2,500 miles long within Canada's geographical limits". Lying across the top of the continental land mass, the almost fifty sites formed a belt across the Canadian Arctic. In the past access to these areas had been difficult. The DEW project theoretically opened up the North by providing airstrips and beach landing facilities in a hitherto remote area. The problem lay in the fact that a private citizen or commercial firm of Canada had to have the permission of the United States Air Force to use these facilities. In reality, the USAF has over the years proved to be remarkably cooperative in granting permission to land, when requested, but it has also insisted that the appropriate clearances be obtained before-hand. This, in Allen's view constituted de facto control over the area.

Editorials in Canadian newspapers between 1955 and 1959 harped continually on this theme of loss of sovereignty. Public concern over this issue was probably one of the main factors that caused the Canadian government to exercise its option, under the terms of the DEW Line Agreement, to participate more fully in the operation of the system. The Agreement had provided that:

> Canada reserves the right, on reasonable notice to take over the operation and manning of any or all of the installations. Canada will ensure the effective operation, in association with the United States, of any installations it takes over.[2]

In early 1959 it was announced that Canada would take over "operational" control of the line effective 1 February. In making the announcement

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[1] Ralph Allen, "Will Dewline cost Canada its northland?", Maclean's Magazine, 26 May 1956.

[2] DEW Line Agreement, p. 6.

the Minister of National Defence, George Pearkes, gave no reasons for this organizational change, but newspapers interpreted the move as being made for the purposes of sovereignty.[1] A strong case could also be made in arguing that the step was also taken to satisfy domestic political pressures. The Windsor Star noted that Prime Minister Diefenbaker speaking in the House of Commons, had said that the "switch was a step to assure that there will be no misunderstanding as to whom the North belongs."[2]

The actual changes were relatively small in terms of the numbers of people involved. Less than two dozen RCAF members were divided among the four main sites in the Canadian sector of the line. Most of the USAF personnel were withdrawn, but a few remained at each main site to act as liaison officers between the USAF and the contracting company which ran the system. Canada, of course, paid the salaries of her own troops, but the DEW Line as a whole continued to be financed by the United States. The auxiliary and intermediate stations continued to be manned exclusively by civilian staff; even at the main sites the military section was only a small component of the total station strength. This organizational change, on the whole, appears to have satisfied those Canadians who were concerned with the sovereignty issue. Lester Pearson, the Leader of the Opposition, noted a few months later that "it has been suggested . . . that the situation in the DEW Line in regard to protection of Canadian sovereignty is much better than it was a couple of years ago."[3]

In addition to Canada assuming operational control of the DEW Line, the establishment of a joint North American Air Defence Command (NORAD)

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[1] Kingston Whig - Standard, 20 January 1959.

[2] Windsor Star, 20 January 1959.

[3] Debates, 4 July 1959, p. 5497.

in 1957 also helped rationalize the aerial defence of North America. Although the United States with its massively greater resources dominated the alliance, Canada was at least assured a say in the planning and conduct of operations, that by their very nature, could not be isolated on narrow national lines. The purpose and relevence of NORAD, which controlled the DEW Line, has been periodically questioned in the media, but despite increasingly vocal opposition, the system continues to function in much the same manner it did in 1959, although technological improvements permitted the closing of the intermediate stations.

The non military "by products" of the DEW Line construction project were important to several sectors of the Canadian economy and to northern development in general. One of the most important of these was the hydrographic survey of the Arctic carried out by the United States. While vessels of the Hudson's Bay Company, the RCMP Schooner St. Roche and other ships had sailed in coastal waters north of the mainland for years, the existing charts and aids to navigation were found to be completely inadequate to meet the needs of the many large ships the United States would have to bring into the area in order to position DEW Line building materials. Over a three year period ships of the United States Navy and the United States Coast Guard aided by HMCS Labrador from the Royal Canadian Navy, charted a thousand miles of the coastline of the Canadian Arctic, from Labrador westward. In 1955 the survey ships operated ahead of the supply convoys, locating and exploring dangerous stretches. In addition to locating a usable deep water channel it was necessary to locate and survey beach landing sites to each radar station. During the second and third seasons, detailed surveys were made of particularly critical areas. The total result of this project was the charting of a thousand mile long deep water Northwest Passage, including

five hundred miles of detailed hydrographic survey and the establishment of twenty-eight radar reflector towers to aid navigation.[1] A Canadian government official who was involved with the construction of the line wrote in The Geographical Magazine as the system neared completion, that the main impact of the construction of the line lay in the improved transportation facilities that had, of necessity, been established in an area that was formerly almost inaccessible. He also felt that these new facilities, particularly the vastly improved water transport system

> "may even mean that minerals, the one natural resource that seems capable of development, will be exploited."[2]

Despite this optimism, which was common to many Canadians at the time, no mineral exploitation or even significant shipping developed in the area. The ships that ply the southern Northwest Passage annually, come, in the main, to resupply the DEW Line stations.

The construction of landing strips and aids to aerial navigation at virtually every one of the radar sites has had a much more important effect on the North. Contemporary northerners are essentially air-minded. Although there were some embarrassing and politically sensitive incidents relating to access to the strips in the early years of operation of the DEW Line when security measures were relatively strict, the situation has eased considerably since the mid 1960s. The DEW Line strips, as anticipated, have permitted government officials, police, teachers, doctors and private businessmen to move around the North much more freely than would otherwise have been possible.

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[1](T. K. Treadwell) "United States Hydrographic Surveys in Canadian Western Arctic, 1955-57", Polar Record, Vol. 9, No. 62, May 1959, pp. 450-452.

[2]C. J. Marshall, "North America's Distant Early Warning Line", The Geographical Magazine, Vol. 29, No. 12, April 1957, p. 628.

The native people of the North were given a good deal of consideration in the DEW project, considering the prevalent social attitudes of the mid 1950s. At the time the Eskimos had no political organization, and the Canadian government's attitude toward them was basically paternalistic. While there were no consultations with the natives to determine their views on where sites should not be located, for example, the government did take steps to protect their traditional way of life. The Canadian note agreeing to the DEW Line contained a section titled "Matters Affecting Canadian Eskimos" and noted that

> It is important that these people be not subjected unduly to disruption of their hunting economy, exposure to diseases against which their immunity is often low, or other effects of the presence of white men which might be injurious to them.[1]

The agents of the Department of Northern Affairs and Natural Resources, or, in their absence, the RCMP were given the final say relative to employment of Eskimos on the project, the relocation of settlements and burial grounds, and the disposal of surplus supplies and materials. The government made a definite effort to isolate the building crews from the Eskimos, stipulating that "all contact with Eskimos, other than those whose employment on any aspect of the project is approved, is to be avoided except in cases of emergency."[2]

The southern perception of the Eskimo was that his absorption into the mainstream of Canadian life, and its value system, was simply a matter of time, but that the process should be gradual and closely controlled. About two hundred Eskimos found employment on the DEW Line construction phase at one time or another. Considering that at its peak the construction force number 7,500 men, this was not a particularly high figure.

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[1] DEW Line Agreement, p. 10.

[2] Ibid.

For many Eskimos this represented the first time in their lives that they had been employed for wages. While most started as unskilled labourers many in time became semi-skilled, or skilled at carpentry, mechanics, or heavy equipment operation. Following the construction boom, a few managed to find continuing employment at the various sites doing menial labour, outside work, or operating vehicles. Southern foremen appear to have been pleasantly surprised at the competence of Eskimo workers, but reflecting a different set of values, were constantly frustrated by Eskimos periodically quitting their jobs in order to pursue their traditional occupations of hunting and fishing for a time.[1] While some managers accepted the Eskimo approach to wage employment philosophically, there is an underlying current in newspaper reports that suggests that many of the natives were having difficulty in becoming "white men". No one suggested that perhaps the Eskimos did not want to become exact copies of their southern breathern.

The DEW Line project had an economic effect on many more Canadians than just northerners. The joint agreement had stipulated that as a general principle, electronic equipment used at installations on Canadian territory should as far as practicable be manufactured in Canada. The Canadian government also insisted that Canadian contractors and suppliers be allowed to compete on equal terms with their American equivalents. In the case of the actual site works, the government insisted that Canadian labour be given preference. The two main contractors for the Canadian sectors were Canadian firms and it would appear that Canada also got its fair share of subcontracts and purchase orders. To build the DEW Line cost the United States Air Force approximately 400 million dollars. A

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[1] Windsor Star, 11 April 1956; Ottawa Citizen, 16 September 1958.

good part of this economic windfall landed in Canada.

In addition to using the North to provide depth to North American bomber defences, the United States, in a relatively unheralded project, prevailed upon Canada to permit the use of Canadian territory in a program designed to increase the operational effectiveness of the main arm of the American retaliatory force--the Strategic Air Command (SAC). Between 1946 and 1953, the Strategic Air Command of the United States Air Force relied on overseas bases in the United Kingdom, North Africa, and Guam for operating and pre-strike locations. By 1953, however, these bases had become both politically and strategically vulnerable and the United States began to seek means of reducing reliance upon them. At the same time, the new B47 all jet medium bomber was coming into service and the B52 heavy bomber prototype was nearing completion. Modern aircraft, coupled with the development of mid-air refueling techniques and equipment, made it feasible for the Strategic Air Command to plan to attack Soviet targets directly from the continental United States.

The "strike from the homeland" concept, known by the code name Fullhouse in the USAF, was presented for consideration in the United States in early 1954. To be fully effective, the program required an extensive refueling and logistic support system in the North. Various models were examined and tested throughout 1954. The inescapable conclusion was that if there were bases in the North from which aerial tankers could sally out to refuel bombers, and to which bombers could deploy both on pre-strike and post-strike flights, strategic targets deep in the Soviet Union could be successfully engaged. The United States already had a base in Labrador, and a base in Newfoundland as a result of wartime agreements with the government of the United Kingdom (Newfoundland was a British colony at the time and did not join the Canadian

Confederation until 1949). In addition, as a result of wartime arrangements with the Danish government, the United States controlled a massive air complex at Thule, Greenland. These three bases, however, no matter how far they were developed could not meet the full SAC requirement. Furthermore, the three bases would have been vulnerable and lucrative targets for a Soviet first strike. The acquisition of more bases in the North would force the Soviet Union to disperse their attacking forces while at the same time permitting the United States to bring a greater number of bombers into the attack than would otherwise have been possible. The minimum number of new bases to support the concept, or so SAC claimed, was twelve--eleven in Canada and one at Sondestrom, Greenland.

The original plans for the bases were quite modest. The USAF envisioned using them for tankers and then only in war time. A small detachment at each site would be sufficient to maintain the facilities. The tankers would fly in when the alert sounded. The American project was funded for fiscal 1958, but before anything could be done, it was necessary to approach Canada, upon whose territory these bases were to be built. Apparently informal talks had been going on between the USAF and the RCAF since the beginning of Fullhouse, but the first formal proposal was not made by the USAF until February, 1956.

Air Vice Marshal C. R. Dunlap, the Canadian Vice Chief of Air Staff, replied to the American proposal suggesting that the USAF be very cautious in the manner in which they promoted the program, for there was a very real possibility that the Canadian government would object on political grounds. The government was already facing intense criticism for having "sold out" control of the North to the United States to build the DEW Line. Permitting that nation to build almost a dozen additional bases to be used in support of offensive nuclear operations might well

have been politically unacceptable. Canada wanted full details on the role the bases would play in strategic operations. The United States replied that this question could only be answered following a survey of the proposed sites. Canada agreed to the survey. Nine sites were deemed to be suitable for the Americans' purposes. Preliminary planning and intermediate level negotiation dragged on into early 1957 when the RCAF informed the USAF that the Canadian government was agreeable to development of SAC refueling facilities. At this point the issue was transferred to the diplomatic level and a draft note was presented to Canada by the American ambassador in August 1957. At the end of 1957 the United States was still waiting for a reply.

While the Canadian government presumably pondered the political and sovereign implications of the American proposal, the USAF reconsidered its entire position. In the light of Soviet development of ballistic missiles, SAC concluded that emphasis should be placed on forces-in-being that were ready for immediate reaction. As part of the "new look" the American requirement for bases was reduced to four, only two of which were to be in the North: Frobisher and Churchill; the other two were to be sited in Northern Alberta. However, in view of the reduced warning time that could now be expected, the USAF felt that they could no longer await the outbreak of war before deploying their tankers northward. The bombers would remain based in the central United States where they were most distant from Soviet strategic weapons, but the USAF now wanted the right to station six tankers at the forward bases in peacetime and the right to deploy an additional twenty in an emergency, but still short of war. The support facilities for these aircraft would naturally have to be more elaborate than the original plans envisioned.

The RCAF were somewhat cool to the idea, feeling that SAC should

have brought them into the picture earlier and anticipated some difficulty in explaining the new proposal to the government, but undertook to try. SAC agreed, but if agreement could not be reached by the end of 1958, the USAF was prepared to abandon the proposal. Canadian agreement, however, was quickly forthcoming, the air refueling facilities program being incorporated as a concomitant of the NORAD agreement which was signed on 20 June 1958.

Considering that five years of planning and negotiation were required before the project was allowed to proceed, the upshot of it all, for the North at least, was surprisingly insignificant. Between 1959 and 1961 Canadian contractors built huge paved runways at Churchill and Frobisher Bay, along with the necessary support facilities and accommodation for the permanent garrisons that maintained the bases. A few northerners found employment during the construction or later during the operational phase. Canadian sovereignty remained intact. Both Frobisher and Churchill had been used extensively by the United States during the war and into the later 1950s. The addition of an airbase squadron and a handful of aerial tankers did nothing to materially change the balance.

It has been seen how American strategic postures changed three times in less than a decade in response to political and technological developments. By the mid 1960s, the manned bomber had been replaced by the Intercontinental and the Submarine Launched Ballistic Missile in the forefront of the American deterrent force. While the bomber wings remained operational, the latest "new" concept of operations did not require the advanced refuelling bases. The United States abandoned them in 1963, leaving in the North some massive buildings which could only be partially used by Canadian government activities, commercial firms or private individuals. They left a few hundred thousand more empty 45 gallon fuel drums,

an insignificant number when compared to the millions that were already lying rusting all over the North. They also left two magnificent, long, paved runways that were capable of receiving the largest aircraft yet to fly. But even this legacy has had no real meaning to the North. The range of modern commercial jets is such that they can easily make inter-continental polar flights without the need to refuel in the North. The Churchill and Frobisher strips could, it is admitted, play an important role were a large commercial aircraft ever to become distressed on a polar flight and have to land. Aside from that, the capacity of these two northern fields remains considerably beyond any requirement of the smaller aircraft that fly the internal northern routes.[1]

The Defence of Northern Lands

At the same time as air-minded strategists and military leaders grappled with the problems posed by the shattered northern barrier, soldiers also were turning their attention to the North. If bombers could approach North America over the pole, it followed that so could transport aircraft carrying light infantry or paratroops. Similarily, once soldiers turned to the popular polar projection map, the proximity of the Soviet Union to Alaska and the Canadian Northwest became strikingly apparent. As was the case with their air force counterparts, the army's perception of the North was coloured by historical experience.

During the Second World War, Canada led her western allies in the development of specialized equipment and techniques for winter warfare. The genesis of Operation Plough in 1942 kindled allied interest in winter operations: Plough was conceived by then Vice Admiral Lord Louis

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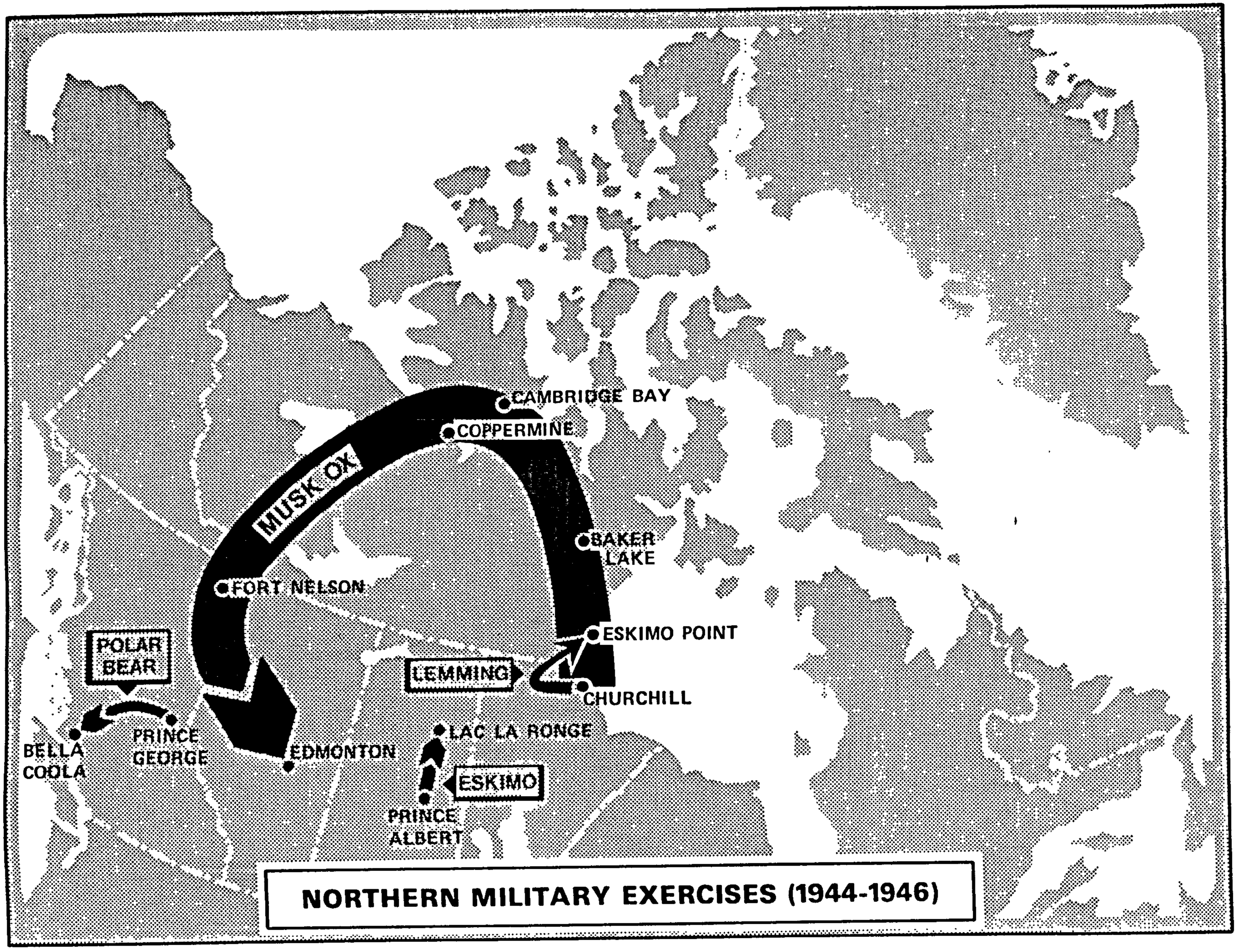
[1]The Fullhouse project received little publicity when it was inaugurated. One of the few sources is United States Air Force, Strategic Air Command Historical Study No. 87, History of the Canadian Refuelling Base Programme, 1961. Held in D Hist, 181.001 (D8).

Mountbatten, the British Chief of Combined Operations, as a diversionary operation. The plan envisioned using troops specially trained and equipment to operate across snow to carry out sabotage raids on Norwegian hydroelectric facilities and thus divert German forces from the intended invasion area of Normandy. Great Britain was unable to produce a highly mobile oversnow vehicle in sufficient time, and the concept was offered to General Marshall who accepted it on behalf of the United States.

The American agencies assigned the responsibility of producing the vehicle, eventually christened the "Weasel", used the services of the National Research Council of Canada in the research and development stage. Canada also undertook to develop an armoured snowmobile of her own design. Eventually, the Plough project was dropped in the autumn of 1942 due to lack of transport aircraft to support the operation. The importance of Plough to the development of a winter warfare capability was that it engendered the development of two vehicles specifically designed for cross snow operations. Although neither vehicle ultimately proved to be totally acceptable in its designed role, they both were important first steps in solving the all important winter mobility problem.

Western interest in winter operations waned after the demise of Plough, but Canada continued to press on with various experiments with her allies looking on with moderate interest. Virtually every aspect of combat operations in winter were examined in Canada between 1941 and 1944, albeit on a modest scale. A winter warfare school was opened in Petawawa, Ontario during the winter of 1941-42. Experiments were carried out on the effect of snow and cold on smoke and gas. Power driven toboggans were tested. Adaptor kits to "arcticize" vehicles so that they could continue to operate at temperatures as low as -40 C were developed. At Shilo, Manitoba, experiments with vehicles and weapons were conducted in snow



NORTHERN MILITARY EXERCISES (1944-1946)

and extreme cold. Special clothing for both dry and wet cold was developed. The Royal Canadian Engineers carried out various trials associated with vehicle mobility across snow and ice. By the end of winter in 1944,[1] the Canadian Army had developed a substantial body of technical knowledge and special equipment related to winter warfare.

By the winter of 1944-45 it was obvious in the West that no special winter warfare skills would be required in order to obtain victory in either Europe or the Pacific. Still Canada pressed on with her developmental work. The Canadian General Staff proposed "collective and tactical winter warfare tests with skeletonized formations of all arms and services."[2] Britain and the United States agreed, and committed a handful of observers to the three exercises that Canada conducted during the winter. These exercises are of importance to this study for two reasons. First, historically, for the first time the Canadian Army went into the North with the objective of conducting tactical manoeuvres. Second, and most important, the experience gained was to colour Canadian military perception of the North for over a generation following the end of the war. Exercise Polar Bear delved into the problems of operations in a wet cold in a deployment that extended from Prince George to Bella Coola in Northern British Columbia.[3] Exercise Eskimo concerned itself with dry cold in the boreal forest between Prince Albert and Lac La Ronge, Saskatchewan. Exercise Lemming, explored the problems that would be

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[1] D Hist, 112.352 (D7), Exercise Eskimo, "Briefing on Exercise Eskimo for Visiting Senior Officers from, U.K., U.S.A. and Canada" (henceforth Ex Eskimo Briefing), 21 January 1945, Appendix 17.

[2] Ibid.

[3] D Hist, 746.083 (D20), Canadian Army Operational Research Group Report 28 "Polar Bear", 15 July 1945. All subsequent references to this exercise are from this source.

encountered on the barrens between Churchill and Eskimo Point on the west coast of Hudson Bay.

Exercise Polar Bear was probably the most challenging of the three exercises in that it encompassed a wider variety of terrain and temperature than did the other two. These varying conditions imposed an additional strain on the participating troops in that different terrain and different climates demanded different equipment, different clothing, and different techniques to cope with the environmental problems. Temperatures ranged from -31 F to +54 F; snow conditions went from none on the coast to over six feet in the interior; terrain varied from rolling plateau with a limited road grid to mountains where passable routes were limited to austere trails. The brigade sized Polar Bear Force was in the field for over two months--February to April 1945.

The lessons learned and the doctrinal points established by the exercise emphasized the heightened importance, as compared to conventional operations, of logistic support, mobility, and specialist training. It was felt that the terrain and climate imposed no necessity to modify tactical doctrine. On the other hand, special measures had to be taken to ensure troops were in a position and a physical condition to fight at the appropriate time. It was evident that combat operations in isolated cold areas of the coast would be dependent upon a single road at best and on a mountain track at worst. A major conclusion of the exercise analysis was that the strain imposed on troops by deep snow, rough terrain, and cold necessitated an extensive reliance upon transport. Troops simply could not man-pack their own equipment and survival gear and still be expected to fight. Where mechanical transport could not go, horses often could, hence horse transport, particularly in artillery units, was thought to be essential. It was realized that reliance upon a single line of

of communication particularly when that line was subjected to the extreme stress of break-up season might spell disaster to a force in contact with the enemy. Reliance upon air resupply proved to be both practical and essential. It was discovered that it was a comparatively simple task for troops to build advanced air strips on frozen lakes along the line of march. Army medical personnel learned the fundamental lesson that there is no such thing as a minor casualty in winter operations. An early evacuation system was essential if one hoped to minimize the seriousness of wounds and hence, to preserve the morale of the advancing troops. The full magnitude of the problems of winter warfare began to be understood by some of Canada's army leaders. Realization began to dawn that troops engaged in winter operations would inevitably spend the vast majority of their time and energy in moving and surviving, and that the effort to do so would require extensive support resources.

Exercise Eskimo was carried out by a skeleton brigade group with the aim of identifying and solving problems faced by an army force moving in the boreal forest beyond its railhead or staging base.[1] Specifically, the exercise was designed to determine the limits of mobility in such a situation and "variations from the accepted tactical doctrine which will be caused by the winter conditions of snow and extreme cold."

The conclusions reached on Exercise Eskimo are somewhat perplexing and are at variance with the tenor of the conclusions of the sister exercise to the west. It was found that the dry cold and terrain of northern Saskatchewan produced no particular problems that could not be coped with, "given adequate equipment and training". Just what precisely constituted adequate equipment and training the post-exercise report did not deign to

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[1] D Hist, 746.009 (D17), Ex "Eskimo", undated (probably summer 1945). All subsequent references to this exercise are from this source.

say. It was found, however, that there would be requirement for road building plant and personnel as well as an increased lift capacity to help move all the survival paraphenalia of winter warfare. The exercise study group concluded that only vehicles operating in the forward areas needed an oversnow capability. They were content that the rear area vehicles could safely remain road bound without affecting the tempo or security of combat manoeuvre. In view of the fact that in their analysis of tactical doctrine they concluded that each of the many frozen lakes in the sector was a potential landing ground for enemy airborne troops, one must question the validity of accepting a logistic tail that could only move on prepared and maintained roads. If the authors of the report had had the opportunity to interview a Russian survivor of the battle of Souomoussalmi which was fought on terrain almost identical to that of northern Saskatchewan, they might have drawn different conclusions.

Named after the diminutive arctic mouse, Exercise Lemming lived up to its name in that it was by far the smallest and most northerly of the three exercises.[1] A party of twelve men, equipped with two Canadian armoured snowmobiles, two American Weasels, and two American M7 half tracks penetrated into the barrens from Churchill to Eskimo Point, turned inland to the half limit of their fuel and returned to Churchill. The aims of Lemming were more general than those of the other two exercises. It was hoped that the expedition would provide "nontactical" information that would help round out the winter doctrine that was being developed out of the other schemes. The terrain encountered over sea ice and the barrens was radically different from that met by the other formations farther to the west. The Department of Mines and Resources had expressed

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[1]D Hist, 314.009 (D179), Winter Trials: Tests 1944-45 "Exercise Lemming", 1 March 1945.

an interest in using oversnow vehicles to supply survey parties which they hoped to dispatch to Victoria and Banks Island during the winter of 1945-46; Lemming provided a means of evaluating the utility and reliability of these vehicles in the Arctic. A third objective was to examine the barren grounds with a view to holding a major exercise there the following winter.

Exercise Lemming was unique in its execution in that, unlike the others, the moving force operated entirely self-contained and did not rely upon a line of communication for daily resupply. Once the convoy departed from its staging base, the USAAF facility at Churchill, it moved as a compact group across sea ice and along the shore line to the RCMP post at Eskimo Point where it refuelled for the return journey. The actual expedition covered a total distance of 653 miles between 22 March and 6 April 1945. Because of the requirements of maintenance and troops rest, the force was only on the move for a total of ten days. Movement was found to be surprisingly easy. On the best day a distance of 113 miles was covered.

The post exercise mobility analysis developed what could be called "the North African analogy". It was noted that military operations in the barrens were as feasible as they had proven to be in the Libyan desert. The study made the important point that operational conditions on the barrens were as different from operations in the boreal forest as was the variance between operations in the North African desert and sub-Saharan jungle. Given the virtual unfettered scope for manoeuvre on the winter barrens, the report concluded that

> it would therefore seem desirable that for defence purposes Canada should develop further oversnow vehicle types and train personnel to operate in these regions.[1]

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[1]D Hist, 746.083, Cold Weather Trials: Exercises Ex Lemming CAORG Report No. 25, 24 May 1945.

It was further noted that the training and equipping of men to operate in the Arctic presented a different set of requirements from those encountered in winter operations within the tree line. Key personnel had to be trained in route finding and navigation in the poorly mapped and featureless Arctic. Special clothing, training, and life support equipment had to be provided to permit troops to cope with the arctic wind. The matter of vehicular mobility was given close attention in the exercise report. A 700 mile unsupported range was thought to be a reasonable capability for arctic operations. Neither the Canadian armoured snowmobile nor the American Weasel were found to be completely acceptable, but a series of recommendations were made, aimed at improving their overall capability. The M7 half track was deemed unsuitable for arctic operations.

By the end of the winter of 1944-45 the Canadian Army had taken major steps forward in consolidating its knowledge and capability for operations in the winter. The wet and dry colds of the boreal forest had been met and survived. Troops had ventured into the formerly forbidding barren lands. It is important to note that all Canadian efforts to this point had been devoted to the mastery of winter warfare and the notion of northern operations had been only peripherally addressed.

The 1944-45 northern exercise series was carried out quietly with little attendant publicity. In any case, world shaping events were being played to their ultimate conclusions in Europe and Asia at the same time. The following winter, however, the world was at peace and Musk Ox, the climatic Canadian Army winter exercise was carried out in the full glare of national and international press coverage. The scheme was designed to "study movement and maintenance in differing cold weather conditions".[1]

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[1]D Hist, 746.033 (D2), Ex "Musk-Ox", (henceforth Musk-Ox Report) p. 9.

While this in itself was a modest enough aim, the proposed plan to move a mechanized force over 3,000 miles across northern Canada, relying chiefly on air resupply, caught the attention of Canada and the international defence community.

In essence, Musk Ox was conceived as a "non-tactical exercise" and the government, when questioned in the House was at pains to emphasize the non-military, scientific aspects of the expedition. Douglas Abbott, the Minister of National Defence said:

> The benefits derived from it may well be of greater civilian value than military value, although it is hoped that they will be both.[1]

The specific subjects to be studied during the trip included techniques of army-air force cooperation under varying conditions of terrain and weather. The exercise members were also to look into several aspects of northern movement including the use of Loran (Long Range Aid to Navigation) and the astro-compass for ground navigation. In the realm of pure science, the troops were required to make magnetic and auroral observations and collect snow and ice data. Completing the research list was the requirement to make notes on the flora and fauna encountered en route.

It is of interest to note that great disparity in size between the group that made the voyage and the several groups that were required to support them. The Moving Force numbered only 40 souls (including British and American observers and Canadian civilian scientists) operating a dozen oversnow vehicles. A special Royal Canadian Air Force squadron operating nine aircraft was formed and trained for the unique task of providing aerial resupply to the Moving Force. Over two hundred additional soldiers were required to man a base camp exclusively dedicated to providing support of a platoon-sized force operating in a non-tactical setting.

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[1] Debates, 14 December 1945, pp. 3552-3553.

Preliminary winter training for the exercise began with a month long concentration at Shilo, Manitoba, followed by an additional six weeks at Churchill, the starting point for the expedition. During this portion of the work-up phase, all members of the Moving Force qualified as snowmobile drivers. Supplementary training in navigation, shelter building, and a host of other arctic skills was undertaken. Short patrols into the barrens served to confirm newly acquired skills and unite the group into an efficient team. On 15 February 1946 the Moving Force rolled out. In front of them lay a 3,200 mile journey. Their route took them north to Eskimo Point and then west and north via Baker Lake and Perry River to Cambridge Bay. At Cambridge the force rested for ten days before continuing on the Coppermine and thence south through Port Radium, Fort Norman, and Fort Simpson to the Alaska Highway at Fort Nelson. From Nelson, it was intended to press south along roads to that final destination at Edmonton. Dust did what cold, snow, forest and river could not do--stop the snowmobiles. The vehicles were loaded onto rail flat cars and the convoy rolled into Alberta's capital after 81 days on the trail.

Considerable publicity attended the completion of Musk Ox but the Canadian government made no attempt to capitalize on this national and international attention, and in fact, tended to play down the operation. The Minister of National Defence speaking in the House said, "There is nothing secret about this expedition; it is a very small one."[1] In some respects, it is surprising that Canada did not attempt to develop the sovereign implications of the expedition. Certainly the government had often expressed concern over the extent of wartime America military

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[1] Ibid. Despite the "non-secretive" nature of the expedition, the exercise report was not classified as an open source until, at the author's request, it was so graded on 25 November 1975.

development in the North and American long-term commercial designs on the region. No evidence could be found that would indicate that either the Canadian military or government considered this option.

The public and military reaction to Musk Ox blew the solid research accomplishments of the exercise beyond reasonable proportions. Commentators in Canada and abroad persisted in ignoring the often repeated Canadian government claims that Musk Ox was a small non-tactical exercise designed to work out several technical problems related to military operations in the winter and to support certain limited scientific experiments. One French military writer even went so far as to claim that, "Since World War II two events have held the interest of military circles--Bimini (referring to the American nuclear tests in the Pacific) and Operation Musk Ox in the Canadian Far North."[1] American newspapers gave extensive coverage to Musk Ox and headlines such as "U.S., Canada Plot Far North Defence"; "U.S., Canada to Prepare A-Bomb Defence in Arctic"; and "U.S. and Canada Join to Guard Polar Area" were common. While it was noted that the expedition had scientific as well as military objectives, the former were given scant attention in newspaper articles and editorials. The basic theme was that the development of long range bombers had made North America vulnerable to an attack over polar regions, and that the development of an army combat capability in the North would in some way allow the North American allies to defend against such attack.[2]

Exercise Musk Ox straddles the hazy temporal boundary that marks the beginning of the Cold War. Historically it must be seen as the final

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[1]French Army Scientific Bureau in Revue des Troupes Coloniales, 1946 (Trans and digest in "Polar Expeditions", Military Review, Vol. 27, No. 1, April 1947.

[2]D Hist, 314.009 (D15), Press Analysis Section C.I.S. - Canadian Embassy, Washington, D.C. Exercise Musk Ox.

phase of the four winter exercises conducted by Canada during the war. Planning for the exercise was done during the final months of the conflict; that the war ended in both Europe and the Pacific before Musk Ox could be launched is only coincidental. As has been noted above, the development of a winter operational capability by the Canadian Army, it would appear, was not initially undertaken with any specific future enemy in mind. Rather it represented an abstract approach to defence capability. If Canada's soldiers were to have the responsibility of defending the country from aggression, it was axiomatic that there should be a capability to operate in any season. Inasmuch as winter demanded special skills and equipment, efforts were made to develop the necessary capability.

An important transition occurred with the coming of the Cold War. During the Second World War the Canadian Army had been extensively engaged in the study of the techniques of winter warfare. That many of these studies had taken place in or on the fringes of the North was largely incidental. In the face of an emerging, but as yet undefined Soviet threat, the winter experience and capability of the Canadian Army was suddenly transformed into northern experience in the eyes of the Canadian government and the Canadian military establishment. In retrospect the equating of winter operations to northern operations was a fundamental analytic flaw that warped Canadian military thinking and programs for many years to come and, to a degree, extends into the present day.

While winter is the dominant season in the Canadian North, it by no means encompasses the totality of the region. Ignoring the other northern seasons led to the neglect of a large and important range of problems that had to be identified and solved before the Army truly could claim to have a fully operational capability in the North. A research paper written in mid 1946, was a classic example of this approach. In

making the point that "Russia was more advanced in Arctic warfare than any other nation,"[1] the author cited Soviet combat experience in Finland and the winter campaigns of the Great Patriotic War as evidence in support of his contention. What he really meant was that The Soviet Army was highly experienced in winter warfare. An article in a Canadian newspaper in 1949 made the same fundamental error. Headlined "Arctic Push Button War 'out'; Winter Too Tough for Army," the story dealt with a series of trials that had been conducted at Churchill the previous winter. The author emphasized the "cold arctic" claiming that "keeping alive (was the) biggest problem." The article went on to recount problems raised by extreme wind chills, the necessity of training troops to load sleds and toboggans, to ski, to pitch a tent, to shelter in snowbanks.[2] In short, "arctic" was equated directly to "winter". In a study published in Military Review, the professional journal of the United States Army, an American officer fell into the same trap. Although his article was entitled, "The Arctic Can Be Our Ally", to him, the Arctic was an area "where conditions of snow and extreme cold make necessary the use of special Arctic equipment and training."[3]

The most significant military characteristic of the North, be it mountains, barrens, or boreal forest, is not the cold, but the isolation of these areas. Most areas have no road access at all; others may have a single dirt all-weather road connecting to the "outside". Thus the development of cross country mobility is the most important technical

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[1]Kendrick Lee, "Arctic Defences", Editorial Research Reports, Vol. 2, No. 5, 31 July 1946.

[2]Winnipeg Tribune, 10 May 1949.

[3]Lieutenant Colonel Joseph J. Peot, "The Arctic Can be Our Ally", Military Review, Vol. 31, No. 11, February 1952.

problem to be faced by a military force attempting to operate in the North, for mobility is essential both for combat manoeuvre and logistic support. This particular aspect of northern operations was identified as early as 1944, but it was repeatedly submerged in the popular notion of "the frigid Arctic" and had to be restated on several occasions in professional journals over the years.

The initial troop and equipment trials carried out by both the United States and Canada between 1945 and 1950 were geared to solving the mobility problem in winter. The need for oversnow vehicles capable of operating throughout the North was repeatedly stated. The Royal Canadian Army Service Corps carried out extensive investigations on the feasibility of using tractor trains for resupply purposes. Major studies were made on the measures necessary to render general purpose vehicles operative in extreme cold. Development projects were also undertaken by both countries to provide the necessary individual clothing that would permit soldiers to live, work and fight in a cold environment. Although some specific technical problems remained only partially solved, by the early 1950s, the United States Army in Alaska and the Canadian Army working out of Churchill had more or less come to grips with the problems of mobility in the northern winter. It had been noted that when lakes, streams, and muskegs were frozen, movement was relatively simple.

Realization had also dawned that the oft-forgotten northern summer presented obstacles to mobility that were infinitely greater than those of winter. As one American officer wrote, "you can walk on water only if it's frozen."[1] Surface water in the form of rivers, streams, lakes and muskegs was a major feature of most northern areas. The United

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[1]Major E. C. Gibson, "Summer Arctic Operations, Military Review, Vol. 32, No. 7, October 1952, p. 50.

States Army's Arctic Indoctrination School had conducted annual courses beginning in 1950 to train troops, and to develop equipment capable of cross country movement in summer. Even in the days before environmental impact became a popular national concern, their efforts were only partially successful. Foot movement across muskegs proved to be exhausting in a remarkably short time. There was a stated need for an all terrain vehicle capable of cross country movement in all northern seasons, but development of such a vehicle proceeded slowly. Increasing attention was paid to airborne operations and the use of aerial resupply. As helicopters became more common in the military inventory, increasing emphasis was placed on "heliborne" operations in an attempt to solve the problems posed by the summer terrain.[1]

As for the other two northern seasons--break-up and freeze-up, both the Canadian and the American armies were generally agreed that military operations were just not feasible during these periods. The individual soldier could not even begin to carry the range of clothing that was required to survive during these critical seasons. It was further realized that the logistic back-up required to support combat operations during these periods would have been out of all proportions to the size of combat force that could have been maintained. However, military operations do not take place in a vacuum--one requires an enemy to have a battle. The general conclusion was that any enemy would be confronted with the same insurmountable problems of mobility as would the North American forces. It was accepted that should war ever come to the North, there would be a pause in operations during spring and fall.

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[1]Lieutenant Colonel John S. Zimmerman, "Arctic Airborne Operations", Military Review, Vol. 28, No. 8, August 1949, p. 28.

In addition to considering the technical details of how one fought in the North, considerable attention was paid to the probable scale of conflict. Eventually, a consensus developed, but not before a lot of what was manifestly nonsense was written. When the Cold War became an international reality, there were early voicings of a fear of a massive Soviet invasion of North America. An American officer, writing in 1949, commented that if an enemy force (obviously Russian) could succeed in overrunning Alaska, they would be in a "splendid position to invade the mainland of the United States."[1] A Canadian officer writing as late as 1960 argued that Northwest Europe simply did not provide manoeuvre room for a limited war, be it nuclear or non-nuclear. He posited a massive Soviet invasion of Alaska wherein, once the beachhead was established, "Russian forces could be pushed eastwards and southwards in an enormous pincer aimed at snuffing out the industrial heart of the continent . . . ."[2] This extreme position was never accepted by military or political leaders of Canada and the United States.

Most who considered the massive invasion scenario argued that it was a most unlikely occurrence. Speaking in the House of Commons, George Pearkes, a future Minister of National Defence said, "It is fantastic to think that large armies could be landed on the Arctic shores of Canada and advanced through the barren lands of the great north."[3] When one considers that the distances involved here are measured in thousands of miles, the point of Pearkes' argument is heightened further still. Even in the west, where at least there was the Alaska Highway, one does not

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[1]Lieutenant Colonel J. L. Collins Jr., "The Army Arctic Indoctrination School", Military Review, Vol. 28, No. 8, August 1949, p. 28.

[2]De Domenico, p. 9.

[3]Debates, 16 June 1955, p. 4870.

talk of invading the most powerful nation in the world relying upon a single road for supply and advance. Whatever fears of a massive invasion there may have been in the early years after the war were laid to rest when military planners of Canada and the United States became familiar with the realities of northern terrain and climate and its effect upon military manoeuvre. A newspaper article written in 1949 was accurate when it said:

> The military planners appear to have abandoned thought of a full scale invasion of North American across the Polar region. On the basis of experience at Fort Churchill and elsewhere, they do not think it could be done.[1]

If the threat of a full scale invasion could be ruled out the possibility of a Soviet lodgement in the North could not be. The arguments over a projected foothold in the North were compelling given Cold War attitudes in North America. An Albertan Member of Parliament observed in 1951 that if a lodgement were made in the Canadian North,

> that the object in doing this would be to create confusion and alarm, in the hope that it would prevent us from sending troops and material abroad.[2]

This same theme had been developed in an earlier newspaper article where it was observed that

> an enemy could establish a token foothold on any of the thousands of islands in the Canadian Arctic, or anywhere in the sparsely populated area of northern Canada.
>
> Thus a diversion would be created that might keep large bodies of Canadian and United States forces pre-occupied, cutting down the forces available for action in more active theatres.[3]

An American officer argued against the lodgement for the sake of a lodgement theory by asking the simple question, what would be the object of such an operation. In the North at the time there were no

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[1] *Halifax Herald*, 9 May 1949.

[2] *Debates*, 15 February 1951, p. 384.

[3] *Halifax Herald*, 9 May 1949.

population centers, no industrial areas, no ports, no communications network, no great developed deposits of natural resources.[1] A Soviet lodgement "in the middle of nowhere" in the North might have been a challenge to Canadian sovereignty, but in itself, such a deployment could not have threatened the security of North America. The occupation of the Boothia Peninsula, or Prince of Wales Island, could have been left in situ indefinitely. Rather than diverting masses of Canadian and American troops from the main theatres of war, such a deployment could have had the exact opposite effect--that of diverting Soviet resources to support the lodgement. It is impossible for a military force to live off the land in the North and still hope to fulfill a military task. The logistic requirements of any lodgement would have been heavy, particularly in view of the transpolar distances involved. Thus, in reality, the occupation of a piece of barren land was not a likely or reasonable objective.

The possibility that any enemy airborne force might seize an airbase in the North was much more real.[2] The defence programs of the Second World War had led to the construction of airbases throughout the North. While most of these did not have the capacity to accept long range bombers, a few of them did. In particular, Whitehorse, Churchill,

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[1]Colonel Paul V. Kane, "If War Comes to the Arctic", Military Review, Vol. 27, No. 10, January 1948, p. 25.

[2]As early as 1946, Field Marshal Alexander as Governor General of Canada drew to the attention of the Prime Minister the obverse of the coin with respect to the construction of air bases throughout the Canadian North. Mackenzie King wrote in his diary on 22 November that "The Governor General says (they) may become bases from which the enemy himself may operate, but would not operate were they not there. It is a difficult problem." Mackenzie King Record, Vol. 3, p. 370. Lester Pearson held similar views. He accepted that eventually both military and commercial needs would dictate the construction of northern airfields which would necessitate the capability to defend them, but wanted to delay such development as long as possible. Pearson coined the phrase "scorched ice" to describe his preferred solution to the dilemma of defence in the North. Cited in Sutherland, p. 264.

Frobisher Bay, and Goose Bay in Labrador were attractive targets. It must be remembered that in the late 1940s and early 1950s aviation technology, despite the tremendous strides made during wartime, still had some very important limitations. There were no truly intercontinental bombers and mid-air refuelling techniques were still to be perfected. Intercontinental missiles were a technological generation in the future.

The popular war scenario as it related to the Canadian North was that Soviet bombers would strike over the pole at the heart of the United States. In the wake of these bombers would come airborne troops who would seize a number of bases in the Canadian North where the bombers could land, refuel and return to the main Soviet bases to rearm.

While the discussion of the likelihood of northern ground combat operations, and their scale, rumbled in political speeches, staff colleges, professional military journals and letters to the editor columns of newspapers, the Canadian Army quietly went about the business of learning and practising how to live and fight in the North. By 1949 the three regular infantry battalions of the peace time Canadian Army had been trained as parachutists and the three, along with supporting arms and services, were styled the Mobile Striking Force. While in theory the Mobile Striking Force was a brigade group ready to defend northern Canada, in reality, the "brigade" had no designated headquarters and never trained together. Battalion groups exercised independently although a shortage of transport aircraft usually limited parachute training to company level operations.[1]

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[1]See Floyd Low, "Canadian Airborne Forces, 1942-1979", University of Victoria, unpublished Hons BA thesis, 1979, pp. 37-47. After 1954 the reality of the situation was recognized by the Department of National Defence when the three independent battalions were styled the Defence of Canada Force. Reflecting the lessened importance of the North, the Force was reduced to a single reinforced company per battalion after 1958.

In the winter of 1950 a joint U.S. Canadian tactical exercise, "Sweetbriar", was organized and conducted along the northern part of the Alaska Highway. Over 5,000 army and airforce personnel, the majority of them Americans, participated in this exercise, designed to test clothing, equipment, vehicles, aircraft, and weapons and to serve as a means of developing a common doctrine and standard operating procedure between the two nations.[1] The conclusions reached after this exercise were similar to those rising from the earlier Canadian exercises held in 1944-45. The relative immobility of ground forces in remote forest areas remained the chief constraint on operations. Wheeled forces remained roadbound; there was a call for the development of a doctrine of employing bulldozers to make roads. It was again realized that success in winter combat in the North would primarily be a function of mobility. More and better over-snow vehicles were obviously required. Within the treeline, however, any vehicle was limited by the paucity of open spaces. While oversnow vehicles could use frozen lakes and rivers as highways, there was no question of forcing vehicles in any significant number through the dense bush. While movement over frozen water-ways would obviously canalize manoeuvre, it was further realized that the potential enemy would face the exact same sort of problem. The idea of going over the terrain rather than across it was increasingly seen as the possible ultimate solution to the problem of tactical manoeuvre in the North. Speaking to the Empire Club in Toronto in March, 1950, the Chairman of the Defence Research Board of Canada argued that the air force would play an increasingly important part in northern operations as techniques and technology developed.[2]

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[1]"Exercise Sweetbriar and Exercise Sun Dog I", The Arctic Circular, Vol. 3, September 1950, p. 34.

[2]Cited in Ibid.

His forecast was to prove accurate.

At about the same time as Sweetbriar, Canada conducted a smaller northern exercise in the area of Churchill.. Dubbed Sun Dog I, a company group carried out a series of tactical movements and patrols along the edge of the treeline and out into the barrens. Sun Dog was part of the Canadian Army's continuing attempt to develop appropriate equipment and an operational doctrine for winter operations. Churchill represented an ideal training area, for in addition to having year round rail and air links with the outside and a substantial army garrison to provide base support services, the surrounding terrain featured both tundra and taiga conditions.[1]

The outbreak of the Korean War and the need to build up NATO forces appears to have diverted the attention of the Canadian military from the North for about a year. There were no major exercises during the winter of 1950-51. The following winter, however, found Canadian and American army engineers at Kluane Lake in the Yukon. Over a six month period about 300 Americans and 135 Canadians trained in building emergency airstrips on frozen lakes in winter and on muskegs after the snow had gone.[2] The importance of air mobility in northern operations had long been a point of theoretical discussion. With Eager Beaver, as the exercise was named, the two armies finally got down to the actual practicalities of training troops in the construction of the field expedient facilities that would be necessary adjuncts to air combat support.

Throughout the 1950s the Canadian Army continued to exercise and train in the northern winter. The Canadian Army fixed its eyes firmly

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[1]Canada, DND (Army) Public Relations P.N. 116-49, press release.

[2]"Exercise Eager Beaver", Arctic Circular, Vol. 5, No. 2, February 1953, p. 22.

on the lodgement as the main security threat to the North. Various exercise scenarios envisioned small groups of "enemy" landing in northern Canada to set up navigational beacons for bombers or to seize an airhead to support sustained operations against southern targets. Later scenarios, reflecting changing technology, dealt with enemy attempts to neutralize early warning radars and to retrieve intelligence satellites that had landed in the Canadian North by error. It would be a mistake to place too much emphasis on these exercise scenarios. Scenarios are usually painted into the exercise preliminaries to increase troop interest, add "realism" and to help train unit intelligence staffs. What the Canadian Army and the RCAF accomplished in the 1950s was to develop a good joint operational capability in the North during winter. Parachute assaults, aerial resupply, airfield building, army-air co-operation and navigational techniques were all developed.

On the whole, these exercises were successful in terms of their training aims but the North showed its teeth upon occasion. In December 1954, Exercise Bull Dog II posited an enemy lodgement at an isolated radar station on the northwest coast of Hudson Bay. A battalion of the Royal Canadian Regiment was assigned the task of recapturing the facility. Then the North struck. Temperatures below -40 C and winds gusting from 20 to 40 miles per hour eliminated any possibility of a parachute assault. The alternative of air landing the assault troops on ice covered lakes was abandoned when it was learned that the ice was still too thin to support the weights of the transport aircraft. The exercise petered out with the "enemy" still ensconsed on the objective.

Summarizing the press reports on the exercise that appeared in British newspapers, Polar Record concluded that the failure of the infantry to reach their objective indicated that paratroops could not be

relied on as an effective striking force in arctic regions.[1] This represented an extreme view. Given the vastness of the area involved and the lack of a communications grid, it is difficult to fathom what other method or system would offer greater reliability. The implicit flaw in the Polar Record argument was that it anticipated a northern operational tempo that was the same as in temperate zones. The northern environment places a restraining hand on the speed of all human activity. Canadian military commanders, schooled on the battlefields of Northwest Europe or the training exercises of NATO, repeatedly had to learn this fundamental lesson of the North and develop a special northern "time sense".

A pattern developed in the continuing series of exercises. The major emphasis was placed upon operations during winter. The Canadian Army approached summer operations with a good deal of caution and only a modest program. In the summer of 1950, Exercise Shoo Fly I and Exercise Cross Country explored the problems likely to be faced by small infantry and engineer units on the snowless tundra.[2] Shoo Fly II the following summer "was designed to re-assess the findings of previous summer exercises employing a larger force."[3] During 1952 and 1953, training in summer continued around Fort Churchill, but like the previous exercises, these were limited in size. Whereas a battalion group was normally deployed on winter exercises, the summer equivalents were limited to companies, with the aim of identifying problems and developing techniques. In winter operations, the Mobile Striking Force troops were generally practising established methods. After 1954, the army gave up

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[1]"Canadian Combined Forces 'Exercise Bull Dog II', 1954", Polar Record Vol. 7, No. 51, September 1955, p. 492.

[2]DND Report, 1951, p. 55.

[3]Ibid, 1952, p. 49.

northern summer exercises completely. No official statement was ever issued explaining the end of the summer program. It is likely that with the equipment then available, the problems associated with mobility were just too great.

Another striking aspect of the army's intense involvement with the North during the 1950s was the fact that all exercises were conducted on the mainland. The army did not venture into the Arctic Archipelago at all. The question as to why the army had never gone farther north never arose during this period. There are some obvious reasons for what seems today to be a strange void; most of them are associated with peacetime limitations. An advanced base was needed for administrative and safety reasons. There were simply more settlements with the appropriate facilities in the treeline. Churchill in particular was an ideal training site and in time came to be used almost exclusively for exercises. On the other hand, considering that the main requirement of a support base was that it have a suitable airport, there were three sites in the islands that met this qualification: Cambridge Bay on Victoria, Frobisher Bay on Baffin, and Resolute on Cornwallis. The most likely explanation is that the army was simply interested in suitable training areas and could find these along the southern fringes of the North. The possible value of a large scale army exercise as a method of preserving sovereignty in the High North does not seem to have occurred to Canada's leaders at the time nor was there a perceived requirement.

It should be noted that army combat training in the North was carried out by southern based units. Here, the army followed the air-force system of deploying troops northward on an exercise, carrying out the training, and then withdrawing the troops until the next training cycle brought them into the North again. There appears to have been no

serious consideration ever given to actually stationing combat troops in the North. A small garrison would have been lost in the utter vastness of the region. A more fundamental reason, no doubt, was the cost such a program would have entailed. To build a base capable of supporting an infantry battalion and its dependants, along with the necessary impedimentia of schools, hospital, shopping facilities, recreational facilities, etc., would have been prohibitively costly. Even the annual operating costs might well have been unacceptable.

While the regular army made only periodic forays into the North, there was one military organization that made its home in the North: The Canadian Rangers. During the Second World War, the Department of National Defence organized an auxiliary corps on the west coast, known as the Pacific Coast Militia Rangers. Basically, they were coast watchers detailed to provide information and report suspicious activities. Unpaid volunteers, these men--loggers, fishermen, miners, road maintenance men--carried out their military duties as they went about their regular civilian employment.[1] The Rangers were disbanded at the end of the war, but in 1947, the ever widening rift with the Soviet Union led to the reactivation of the force, this time on a national level. The Canadian Rangers, as the force was now styled, formed a component of the reserve militia. Their purpose was to:

> provide a military force in sparsely settled northern, coastal and isolated areas of Canada which cannot conveniently or economically be covered by other elements of the Canadian Army.[2]

Rangers received no pay but were provided with a .303 Lee Enfield rifle, and one hundred rounds of ammunition a year. Later a distinguishing arm

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[1]Larry Dignum, "Shadow Army of the North", The Beaver, autumn 1959, p. 22.

[2]Canada, DND, Directorate of Public Relations (Army), Memorandum, 27 January 1954.

band was added to the basic equipment.

There was a certain logic to the Ranger project. Scattered throughout the remote coastal areas of the Atlantic and Pacific, and throughout the North, they were the permanent residents who knew both the terrain they worked in and all their immediate neighbours. At a time when there was a general military concern over the possibility of saboteurs infiltrating the country or small clandestine military bases being established in isolated areas, the main role of the Canadian Rangers was to report any suspicious activities occurring in their locality. Since the nature of the Rangers' civilian work took them out onto the land it was thought that eventually they would detect and report any lodgement that might be made. The Mobile Striking Force could then be deployed to deal with the enemy.

In addition to their primary role, the Ranger organization, by its very nature, had the potential to fulfill a host of secondary roles. Experience proved that they made excellent guides for regular army troops exercising in their locality. In addition they could supplement the RCAF's Ground Observer Corps with reports of aircraft sightings, form ground search parties for lost aircraft, or assist the RCMP in apprehending "enemy agents or saboteurs".[1] Replying to a question in the House of Commons as to the purpose of the organization, the Minister of National Defence said:

> The intention is that the corps shall be organized in companies in areas where there are no reserve army units, particularly in the north and along the coasts of Canada. The purpose will be to act as guides, to make available local knowledge, to assist in search and rescue work, and to report any activities that should not be going on in consequence of action by an enemy or the like.[2]

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[1] Ibid.

[2] Debates, 23 March 1948, p. 2504.

The Ranger organization did not spring to full strength overnight. Because potential recruits lived in isolated areas, officers from the various "commands", or divisional areas, into which the country was divided at the time, had to make their way around the scattered settlements explaining the Ranger idea, entering recruits on the rolls, and issuing equipment. It would appear that the normal system was to locate a likely company or platoon officer in a community, and leave it to him to recruit his friends into the force.[1] As was observed in the DND Report for 1950, "this process has, of necessity, been slow, owing to the large area covered by the organization and the nature of existing communications."[2] As late as 1954, the recruiting process was still going on. Along the Pacific and Atlantic coasts the recruiting went relatively quickly as each community inevitably had year round access to the sea. In the North, the process was much slower.

It was inevitable that, at best, a regular force Ranger officer might get to see his charges once a year. Native Rangers might leave one settlement and move to another, or go live on the land. White Ranger officers might leave the North or be transferred to a different locality. Some Rangers might just lose interest in the program and stop reporting. The northern Ranger companies, platoons, and sections, in the final analysis, ran themselves on an all but autonomous basis. What fragmentary records still exist of the early Ranger program are full of correspondence from Ranger officers trying to determine just who was on their unit strength and where the weapons were. In some instances, command of the local Ranger detachment came to be vested in the occupant of a certain

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[1] Canada, DND Report, 1953, p. 46.

[2] Ibid., 1950, p. 46.

job in the community. For example, there exists a letter from a new manager of a Hudsons' Bay Company store in the Eastern Arctic to the Department of National Defence stating that he understood his job included commanding the settlement Rangers, that he was willing to do so, but just what did it all involve?[1] The impressive organization of army companies, platoons, and sections that existed on paper was not really reflected in the reality of the North. Companies and platoons existed for administrative purposes, the Rangers' "military" job was carried out on an individual basis.

The personnel who made up the Rangers were a varied lot. In the High Arctic a serious effort was made to recruit Eskimos. Within the treeline, the situation was somewhat different. The local detachment commanders established their own recruiting policies without much reference to Ottawa or Command Headquarters. Captain John Anderson-Thompson commanding the Yellowknife Company recruited only Whites;[2] at Norman Wells the Rangers were all employees of Imperial Oil. In the Yukon, most of the permanent civilian staff at maintenance camps along the Alaska Highway were Rangers, but these men tended to be Whites. Kit Squirechuk, commanding the Whitehorse detachment, however, numbered about a dozen Indians in his 35 man group. At Dawson City, all fourteen Rangers were White.[3] The officering of the Rangers reflected contemporary military and southern Canadian attitudes: all the officers were white. At the time this was probably a necessity since the administrative responsibilities

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[1]Canada DND, Northern Region Headquarters, Central Registry, "Rangers - dead file".

[2]Interview, Mr. John Anderson-Thompson, Yellowknife, 18 July 1975.

[3]"Outpost Defenders 'Just a Bit Better Prepared'", Canada Month, March 1964, p. 20.

and paperwork requirements of the job probably would have required an education beyond that which most northern natives had at the time. In the High Arctic, however, Eskimos were made sergeant section commanders in some instances.

The Canadian Rangers in the North reached their peak during the early 1950s at a time when the Mobile Striking Force was conducting major winter exercises North of 60. In the "Bulldog" series, White Rangers at Yellowknife and Norman Wells proved to be enthusiastic "participants" in the exercises, acting as guides and scouts for the regular paratroops. A few White Rangers from the more settled southerly reaches of the North were able to get time off from their regular jobs to take army-sponsored survival courses or military training at Camp Wainwright, Alberta. Distance precluded any attempt ever being made to conduct similar training for the Rangers scattered along the arctic coast.[1]

In theory, the Rangers served a useful purpose at the height of the Cold War. As far as is known no "saboteurs or enemy agents" were ever landed in the remote areas of the Canadian North during the late 1940s and 1950s. There were easier, and safer ways to enter Canada. The issue service rifle and ammunition was undoubtedly an effective means of saving money in the North. Nobody has ever attempted to calculate, or could if one wanted to, the number of caribou, moose, and seal that fell to the Ranger marksmen. The argument could be made that the Eskimo Rangers in particular, by having a definite role to play in the defence of Canada, became more closely attuned to national aspirations and values. In the absence of any concrete evidence or detailed studies, such a notion is pure speculation. An equally strong case could be made to the effect

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[1]D Info, Morgue file, Rangers--PR release, 8 October 1958; "Outpost Defenders", p. 20.

that the Ranger program was nothing more than a way to get a free rifle for the natives, and a diverting "social club" for the Whites. We just do not know.

What does seem clear, from the scanty evidence available, is that the Rangers provided the popular press with a field day throughout the 1950s. Much of what was written was grossly exaggerated, a flight of fancy, or just plain wrong. The Montreal Gazette in a short article on the Rangers entitled the piece "Unsung Ranger Arctic Defenders in 'Guerrilla Warfare' for Army". The article clothed the Rangers in mystery, claiming that their numbers and locations were secret and that

> Should an enemy ever advance over the Arctic barrens, the Rangers' role would be hit-and-run operations to stall the invading force until Canada's mobile striking force could be transported or parachuted into the area.[1]

Two years later, The Star Weekly Magazine produced a feature article on the Rangers entitled "Eyes and Ears of the North" claiming that "unsung, almost unknown, the Rangers keep watch--the pick of the volunteers who form Canada's first line of Arctic defence." This article too suggested that "the Rangers would be invaluable if it were ever necessary to wage guerrilla warfare in the northern most parts of this country."[2] These repeated references to guerrilla warfare were creations of the popular press; army press releases continued to emphasize the roles of the Rangers in observing and in aiding civil authority in time of civil emergency or disaster. If guerrillas are "fish who swim in the sea of the people" they would find the Canadian North to be a very small pond in terms of population. It is difficult to conceive of how a successful guerrilla campaign

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[1]Montreal Gazette, 13 February 1954.

[2]Robert Taylor, "Eyes and Ears of the North", The Star Weekly Magazine, 22 December 1956.

could be mounted in the North and particularly in the Arctic. While those who knew the area intimately might be able to avoid capture by withdrawing to the empty spaces, living off the land has always been a full time occupation. There would be little time or energy left over for the Ranger-guerilla to fight. Still, the image of the Rangers as a "shadowy band of defenders"[1] was one that pleased Canadian readers, and articles to that effect continued to appear.

Army activity in the North peaked in the late 1950s and thereafter began a gradual decline until, by the mid 1960s, the military had virtually abandoned the area as a potential operational theatre. Sub-units continued to train from time to time at Churchill, but after 1964 when the military base was closed, this training became increasingly rare. The Canadian Rangers were seriously affected by the diminished army interest in the North. The Rangers were not disbanded, but they were left to wither on the vine. White Rangers left the North and replacements were not recruited. Rifles were lost or damaged and were not replaced. The annual resupply of ammunition became sketchy. Regular Force Ranger Liaison Officers made fewer and fewer visits into the North. The White Paper on Defence of 1964 gave official utterance to what had become an informal reality. There is not a single reference to the North in the entire White Paper. In point of fact there is very little attention paid to the defence of Canada in the document. The section entitled "Defence of Canada" begins with the opening sentence:

> It is, for the foreseeable future, impossible to conceive of any significant external threat to Canada which is not also a threat to North America as a whole.[2]

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[1] Victoria Colonist, 10 September 1958.

[2] Canada, White Paper on Defence (Ottawa; Queen's Printer 1964), p. 13.

It was allowed that:

> the minimum requirements for the defence of Canada are: the ability to maintain surveillance of Canadian territory, airspace and territorial waters; the ability to deal with military incidents on Canadian territory . . . .[1]

While these may have been the minimum requirements, there is no indication in the subsequent structuring of the Canadian Armed Forces that any specific steps were taken to develop a surveillance or combat capability in the forces appropriate to the needs of the North in the 1960s.

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[1] Ibid.

CHAPTER VII

THE OTHER OCEAN

Naval Operations in the North

For the first four decades of its existence, the Royal Canadian Navy studiously ignored the seas that surround Canada's North. Until after the end of the Second World War, no Canadian government or admiral ever found reason to dispatch any element of the fleet to far northern waters. In this respect, the navy was not unique for, as has been seen, the entire Canadian military establishment had shown only minimal interest in the North. In 1945, however, the Royal Canadian Navy was swept up in the "polar passion" that gripped the Canadian and United States governments and military for about a decade.[1]

Canada considered and studied her options and needs. The United States Navy and United States Coast Guard sailed into the arctic seas. Starting in 1946 with an exercise dubbed Nanook, American maritime elements began a vigorous program of scientific study aimed at increasing military knowledge and operating capability in northern waters. It is probable that this not inconsiderable American effort provoked the Canadian government into taking measures to create an immediate Canadian naval

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[1]The Royal Canadian Navy emerged from the war as the world's fourth largest navy, this unusual state of affairs admittedly being due to the fact that many of the world's traditional naval powers--Germany, Italy and Japan being temporarily hors de combat. Circumstance and war necessity, however, had made Canada's navy into what was primarily a highly specialized anti-submarine force. Particularly limited were its offensive capability and its ability to participate in combined operations.

presence in the North. The problem faced by the government and the navy was to determine just what a specialized anti-submarine warfare navy was to do in the North and how it could do it.

The RCN, on the whole, was reluctant to take on a northern commitment. While the United States became increasingly committed to the "Polar Concept" in her strategic outlook, and fashionable strategists agreed that the Arctic Ocean would be the "Mediterranean of the future", senior officers of the Royal Canadian Navy kept their eyes steadfastly on the North Atlantic. As late as 1947, they were arguing, with some justification, that an ASW force had no place in the Arctic: historically, there was not enough shipping to tempt an enemy submarine into the area. The following year, the professional naval opinion changed slightly, mainly due to the decline of international relations with the Soviet Union and knowledge of high Soviet naval competence in their own northern waters.

The first public acknowledgement that the RCN had an interest in the North came in June 1948 when Brooke Claxton, the Minister of National Defence, announced in the House of Commons that elements of the navy would undertake a northern cruise that summer. Canada's only aircraft carrier, HMCS Magnificent, was "arcticized" to permit her to operate in high latitude.[1] This modification, however, related exclusively to preparing working and living quarters and equipment for low temperature operation. No work was done on the hull or power plant to give a capability for operating in ice. In this sense, the Minister was exaggerating the capabilities of the ship when he said that she had been "arcticized". The cruise was to be made at a time when sea conditions would be at their optimum. Hudson Strait and Hudson Bay were, in reality, much less challenging and difficult than the more northerly waters of the Northwest

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[1] Debates, 24 June 1948, p. 5785.

Passage. Still, it was a beginning which promised a more extensive northern involvement for the navy in future. In making the announcement, the Minister had referred to "the importance to us of the northern waters".[1] No attempt was made to explain why northern waters were suddenly important to Canada after almost a century of neglect.

Magnificent, with the destroyers Nootka and Haida in company, sailed from Halifax on 2 September 1948 with army and airforce observers, a representative of the Dominion Observatory, and the naval attachés of the United States and Great Britain on board. Five days later the ships were in Hudson Strait, operating off Wakeham Bay, the former headquarters of the 1927-28 Hudson Strait Expedition. The navy did what it could to help the missionary and the eighty Eskimos that constituted the total population of the settlement. The ship's doctor held a "sick parade" and naval communications technicians repaired the missionary's radio. The following day, Magnificent sailed for home, leaving the two destroyers to continue the cruise into Hudson Bay.

On 11 September 1948, Nootka and Haida tied up at Churchill--the first ships of the RCN ever to enter Hudson Bay. After a four day visit at Churchill, the destroyers sailed north, calling at the village of Coral Harbour on Southampton Island and at Port Burwell. Harbour soundings and chartings were made at both locations. By 23 September, the two ships, having rendez-voused with a tanker for refuelling, had cleared the Strait and were en route for Halifax where they arrived five days later.[2] The navy's first venture into northern waters was, within its very limited objectives, a success.

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[1] Ibid.

[2] "The RCN Northern Training Cruise", The Arctic Circular, Vol. 1, No. 7, November 1948, pp. 75-76.

The 1948 northern cruise received considerable publicity in Canada and was commented upon favourably in several journals specializing in northern matters. It is important, however, to keep the voyage in perspective. Its sole importance is historical in that it marked a "first" for the RCN. Certainly, the challenge presented by Hudson Strait and Bay in late summer is insignificant in comparison to that of the North Atlantic in winter. In any case, the ships were simply following an established shipping route that had been in existence for three centuries and which had been marked with modern aids to navigation for twenty years. Still, the navy and the Canadian public took considerable satisfaction in what was popularly thought to have been a significant accomplishment. In reality, concerned Canadians were simply underlining their woeful ignorance about the North.

The following year, the frigate HMCS Swansea continued the program of familiarizing naval personnel with operating conditions in the North by undertaking a cruise to the southern portion of Baffin Island. As in the previous year, the voyage was undertaken at the height of the shipping season. A thin skinned frigate had to rely on avoiding ice, not challenging it, if it hoped to reach its destination. Swansea arrived at Frobisher Bay on 30 August 1949, and continued up the east coast of Baffin Island, eventually reaching Clyde River, before turning south. A courtesy call was made at Godthaab, Greenland on the return voyage.[1]

The RCN's northern program evoked a small spark of interest in the House of Commons in 1949 when an opposition member requested assurance from the Minister of National Defence that "an adequate portion of the naval training is being carried out in Arctic waters". He made, however,

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[1] "Royal Canadian Naval Cruise 1949", The Arctic Circular, Vol. 2, No. 8, December 1949.

no attempt to explain why he felt such training to be important. The member envisioned a possible new role for the navy in the North when he suggested that annual resupply, community support, and scientific research tasks might well be done by the RCN. He observed that hitherto when work was required to be done in the North, the Department of Transport had usually contracted a commercial firm to do the required job; he felt that the navy could be trained to do the required work.[1] Presumably he was suggesting that responsibility for the Eastern Arctic Patrol be given to the navy. His suggestion evoked no reply and the issue was never raised again.

The idea was somewhat simplistic. For the navy to venture into the waters of the High Arctic would have meant the acquisition of new, ice-capable ships in addition to new training. It also again begged the question of the purpose of such training and experience. A naval presence in the North might have been important for maintenance of sovereignty, but in the late 1940s, the North was not considered to be a potential battle-ground either by naval leaders or thoughtful civilians. In addition to the purely military aspects of the thesis, there was an important political aspect. It was a well established principle in Canada that the military would carry out national development tasks only when no commercial firm or civil department of government was capable of doing so at a reasonable cost. In the case of the Eastern Arctic Patrols, the Department of Transport, in conjunction with the Hudson's Bay Company, had been successfully operating the program for over two decades.

Despite the Minister's assurances that arctic training would be carried out by the RCN, Swansea was the last Canadian warship to visit

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[1]Debates, 19 November 1949, p. 1974.

northern waters for several years. By the time the 1950 shipping season opened, Canada was involved in the Korean War. In Europe, the Soviet threat was perceived with growing western apprehension and the RCN was fully occupied with Canada's anti-submarine role of keeping the North Atlantic open in the event of another major war.

The next warship of the Royal Canadian Navy to operate in the North was HMCS Labrador, a purpose-built Arctic Patrol Vessel. The minister had spoken of the government's intention to acquire such a ship in 1948 when he announced plans for the RCN's first northern cruise.[1] By 1949, detailed plans were well advanced and in November, 1949 the keel for the new ship was laid in the yards of Marine Industries Limited at Sorel, Quebec. The design was based on that of the Wind class icebreakers of the United States Navy and Unites States Coast Guard.[2] Work progressed very slowly on the ship due to design changes during construction and delays in delivery of building materials. The ship was not launched until December 1951 and was only handed over to the RCN in July 1954.[3]

HMCS Labrador was a modern ship in all respects. Displacing 6,790 tons and 269 feet overall length, she was the RCN's second largest ship. The ship's company numbered 24 officers and 204 ratings although in practice she usually carried additional civilian scientists and observers. As befitted her role, she was built for power rather than speed. Her top speed was a mere sixteen knots, but with all six of her diesel engines on

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[1]Canada, DND, Naval Historical Section, History of HMCS Labrador, (henceforth Labrador History), Ottawa: ms. unpublished 1960, p. 1.

[2]"The Northwest Passage Navigated, HMCS Labrador, 1954", (henceforth "Labrador 1954") Staff Monograph held in HMCS Labrador file, Canada, DND, D Info.Morgue.

[3]Labrador History, pp. 3, 6. It is interesting to note that when, a few years later, the United States built its first nuclear powered submarine, USS Nautilus, it took only one year from keel laying to launching.

line, she could develop an impressive 10,000 horsepower. A flight deck aft accommodated two light helicopters for general reconnaissance work and, in particular, to assist in route finding in heavy ice. The ship's boats were specially designed for use in hydrographic surveys.[1]

If it had taken the RCN a long time to actually get its ice-breaker, the navy was quick to put it to use. Barely two weeks after commissioning, Labrador had been steamed to her home port of Halifax, provisioned, and was on her way to the Arctic. By the end of the month she had entered Lancaster Sound, the eastern entrance to the Northwest Passage--a new "first" for the Royal Canadian Navy.

Labrador had five "official" functions. The main role was to carry out patrols in northern waters with a view to providing the RCN with the knowledge and experience required for the planning and conduct of future naval operations. She was also to conduct hydrographic and scientific surveys as needed by the navy and, naturally, to carry out ice-breaking as required during arctic operations. In addition, the ship was to provide logistic support for Canadian arctic bases and, within her capabilities, to perform rescue and salvage duties in arctic areas.[2] On her first cruise she was to perform all of these duties--and more.

During her first season of operation, Labrador ranged through Lancaster Sound. She operated along the east coast of Ellesmere Island as far north as Kane Basin. Later in the season she moved westward in the Passage, eventually breaking into the Beaufort Sea. At the season's end she rounded Alaska, thus becoming the first warship ever to transit the Northwest Passage.

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[1] "HMCS Labrador: Arctic Patrol Vessel", (Ship's brochure 1955, held in D Info Morgue, HMCS Labrador file).

[2] Labrador History, pp. 6-7.

Her accomplishments, however, are best measured in terms of what she did rather than where she went. Hydrographic studies and equipment and clothing trials were conducted in early August in and around Lancaster Sound and Baffin Bay. The ship then headed south back to the Passage where she based herself at Resolute Bay on Cornwallis Island. Various soundings, surveys and scientific projects were continued until 19 August, when a distress call took Labrador to Baring Channel north of Prince of Wales Island. The motor vessel Monte Carlo had become trapped in the ice between Prince of Wales and Russell Islands. Monte Carlo was a small fishing boat crewed by a party of students from an American college. Labrador felt her way along in dense fog for two days until visibility improved on the afternoon of the 21st. One of the ship's helicopters located the stranded vessel and Labrador broke through twenty miles of ice to free her and tow her out to the main channel. The small craft was reprovisioned and her crew advised to stay out of dangerous waters in future!

For the remainder of August, Labrador slowly worked her way westward through Barrow Strait into Viscount Melville Sound, carrying out oceanographic and hydrographic studies as she went. South of Melville Island, Labrador fell into company with the American naval icebreaker USS Burton Island which was working with the joint United States-Canadian Beaufort Sea Expedition. A program of co-operation and mutual support was laid out in which the two ships jointly sounded the eastern end of M'Clure Strait. Having transited Prince of Wales Strait, the two ships joined USCGS Northwind at Richard Collinson Inlet on Banks Island. A survey team from the Dominion Hydrogrphic Office was rescued from the east coast of Banks Island when they reported that all their Weasel vehicles had broken down.[1] The

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[1] In the Report on Exercise Musk Ox it had been noted that Weasels were not sufficiently robust for independent operation in the Canadian Arctic.

research program was continued until 21 September in and around the Beaufort Sea. On that date one of the crew members fell gravely ill and Labrador immediately sailed for the Pacific coast naval base at Esquimalt, arriving there on 27 September, 67 days out of Halifax.[1]

Considerable publicity and public interest attended Labrador's arrival at Esquimalt. The fact that she had sailed through the Northwest Passage was seen by the press as being the most important accomplishment of the voyage, although the research activities were also noted. To the ship's company, and to the navy, however, the most significant result of the first cruise was the training and experience gained in operating in the polar sea. The ship's unofficial history also noted a more subtle result of the voyage, as

> it marked the first incursion of a Canadian naval vessel into waters which the U.S. Navy and Coast Guard might well be excused for considering mare nostrum. For a good many years, particularly since the establishment of the Joint U.S.-Canadian weather stations in 1947, the only ships seen in the waters of the Canadian Archipelago, apart from a few government supply ships, were those flying the Stars and Stripes. In 1954 for the first time Canada had a ship patrolling her northern waters.[2]

Labrador's arctic program for 1955 was every bit as demanding as had been her first cruise, although the focus of employment changed considerably. The 1955 shipping season marked the beginning of major construction on the DEW Line, and Labrador was given an important role to play in support of the supply convoys operating in the North. On 15 June, Labrador sailed into Hudson Strait to begin preparatory work for the massive sea lift of supplies and equipment that would come later in the summer. This work included more hydrographic surveys, installation of navigational control stations, and the selection, survey and preparation of actual beach

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[1] "Labrador" 1954".

[2] Labrador History, p. 219.

landing sites. The most important task of all, however, would be ice-breaking support for the forty-ship convoy expected in Hudson Strait in ealy August. By September the task was finished and the American ships departed for the South, none having received more than superficial damage. Labrador remained in the North for another month to continue hydrographic and oceanographic studies that had been started the previous year; then, she too turned south and abandoned the Arctic to winter.

The navy was flooded with requests for the Labrador's services for the 1956 season. The United States Military Sea Transport Service wanted her for support of DEW Line constructions and supply. The Defence Research Board, the Department of Mines and Technical Surveys and the Fisheries Research Board all made bids to use her facilities for arctic research projects. One of the few agencies that could not see much use for the ship was the Royal Canadian Navy. In August, 1956 the navy began seriously to consider the possibility of turning Labrador over to the Department of Transport. The Director of Naval Plans and Operations, Captain W. M. Landymore, produced a major study examining the military implications of a continued naval presence in the North. He noted that if the ever popular enemy lodgement were made, the other fighting services were much better equipped and trained to respond than was the navy. He further noted that no matter what the operational requirement, ship's movements were governed by seasonal navigational limits. In any case, even if Labrador could operate in ice strewn waters, other ASW ships of the navy had no combat capability whatsoever under such conditions.[1] Landymore apparently did not consider the sovereign implications of operating a naval ship as opposed to a Department of Transport ship in the arctic patrol role.

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[1]Cited in Labrador History, p. 219.

The naval staff accepted the logic of Landymore's arguments and in October recommended a departmental transfer of the vessel. They were reacting in part to a governmental directive which stated that the navy's highest priority be given to having a maximum number of effective fighting ships. Under such ground rules, Labrador had, admittedly, no place in the RCN, whose main focus of interest remained on NATO and the North Atlantic. The Naval Board, on the other hand, adopted a somewhat more cautious attitude and declined to take any action on the proposal for the time being. During the summer, Labrador's activities had been a virtual repeat of her 1955 cruise, her main mission being in support of the DEW Line sealift. In September, following the end of her sealift responsibilities, she had established another record by executing the first east to west passage of the difficult and often ice clogged Fury and Hecla Straits between Baffin Island and the Melville Peninsula.

During the 1957 season, the pattern of employment that had developed over the previous two years continued. Hydrographic and charting activities, Defence Research Board activities, and support of other government agencies' research projects alternated with DEW Line resupply duties. By the summer of 1957, however, it was clear that the days of Labrador as a ship of the Royal Canadian Navy were numbered. At the end of July, the Department of Transport requested the services of Labrador for ice breaking duties in the Gulf of St. Lawrence and offered to take over formal operation of the ship. This time, the Chief of Naval Staff, Vice Admiral H. G. De Wolf, agreed. In a letter to the Minister, De Wolf carefully examined the implications of the navy giving up Labrador. He noted the valuable arctic experience gained by the ship's company (but did not say in what manner this experience was useful to the RCN). He also noted the satisfaction obtained in performing "useful service to the country and assistance

to other government departments with resultant goodwill". De Wolf showed his awareness of the important sovereign implications of HMCS Labrador's northern cruise when he wrote:

> (T)here is, I believe, a very real value in showing the white ensign in the Canadian North where the stars and stripes are so much in evidence.[1]

On the negative side, however, it was noted that Labrador's employment was essentially non-military; that the ship had no operational role in war. In fact, existing plans were such that if war were to break out, Labrador would have been paid off in order to permit the manning of "additional escorts". De Wolf took the position that in view of the government's instructions to reduce expenditures for fiscal year 1958-59, this could best be done by transferring Labrador to the Department of Transport. The one proviso to the transfer was that should a war or a national emergency arise that called for the military operation of an icebreaker, the ship was to be made available to the RCN.[2]

In the autumn of 1957 Labrador sailed to the port of Saint John, New Brunswick where she went into a major refit prior to departmental transfer. Most of the crew was paid off at that time with the exception of a small refit detachment which remained with her until the end of March 1958, when she officially ceased to be a ship of the Royal Canadian Navy.

Opposition members of parliament appeared to be quite skeptical when details of the proposed transfer of authority over the ship were announced. When one asked if "the traditional role of exploration and charting in arctic waters" was being cancelled in the interests of economy, the Minister of Transport, George Hees, explained that the summer

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[1] Ibid, p. 130.

[2] Ibid, p. 131.

exploration charting program would continue under Department of Transport auspices, but more economical use would be made of the ship by using her as an icebreaker in the Saint Lawrence during the winter.[1] Another member questioned the advisability of the transfer on the grounds that Labrador was "Canada's medium for exhibiting sovereignty over the Canadian Arctic". He wondered if the Department of National Defence was really in favour of the transfer or if the project were simply a case of the powerful Department of Transport "calling the tune".[2] In this respect, the suspicion of bureaucratic power politics was misplaced for it is clear that the RCN was as eager to get Labrador off its hands as DOT was to take it over. George Pearkes, the Conservative Minister, replied that the transfer of Labrador was the result of government review "of those responsibilities of the defence department which might, with economy, be assumed by civilian departments of the government".[3] What remains unclear is the degree to which monies were actually saved by the transfer. The work performed by Labrador represented a fixed annual commitment. Any absolute reduction in defence expenditures would have, presumably, been off-set by an approximate similar increase in the DOT budget.

Despite the explanations of both ministers concerned, the opposition remained unhappy. In January 1958 a question was asked as to

> why this ship . . . a naval vessel of a particular type for an area which was required to be patrolled by the navy, should have been transferred to what is a peacetime department? (i.e. The Canadian Coast Guard).[4]

Pearkes replied, accurately, that there were other means of patrolling

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[1] Debates, 11 November 1957, p. 944.

[2] Ibid, pp. 1151, 1157.

[3] Ibid, p. 1103.

[4] Ibid, 3 January 1958, p. 2823.

northern waters. In this sense there could be little argument, for Labrador, flying the colours of the Canadian Coast Guard could carry out patrol duties and show a federal presence in the North just as well as she could flying the white ensign. The opposition members appear to have failed to grasp the essence of the problem. They peppered the Minister with questions about how the RCN proposed to train its personnel in future for the specialized conditions found in arctic waters. The Minister's reply that other ships, namely frigates and destroyers from the Atlantic coast,[1] would be used, ignored the real import of the questions. Surely the concern of members of the opposition was with the ability of the navy to operate in ice, which destroyers could not do. In any case, the question that remained unasked was why should the navy have an operational capability in the North in the first place. No professional sailor in Canada had been able to answer that hypothetical question and as a result, Labrador was given up. The sterile public discussion of the navy in the North, however, continued into the early 1960s.

Charles Lynch, one of Canada's leading political commentators, commenting on the RCN's year end review of activities, for 1960, noted that:

> There were no cruises, however, along Canada's longest sea coast--the northern one. Since the government took away the icebreaker Labrador and gave it to the Department of Transport, the Navy has lacked a vessel capable of operating in the northern seas, even for flag showing purposes.[2]

In point of fact, soon after Lynch's article appeared, the RCN considered anew the desirable characteristics of an Arctic Patrol Vessel. The staff paper in question was written with a view to the return of Labrador to the

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[1] Ibid.

[2] Ottawa Citizen, 28 December 1960.

to the navy where her mission would be:

> To assist in the maintenance of sovereignty over Canadian territorial waters in the Arctic and icebound environments and, by supporting research, to improve the Canadian defence capability in those areas.[1]

To date, no Canadian government has felt it necessary to have the navy again operate a polar icebreaker. The needs of sovereignty have been maintained by Canadian icebreakers in the colours of the Canadian Coast Guard. Inter-departmental co-operation has apparently satisfied specific research and support requirements. In this respect, Canada is not unique. Most nations that operate icebreakers do so under the aegis of a coast guard or some similar organization. The subtle difference between an icebreaker manned by a naval crew and the same vessel manned by what is essentially a non-service department, has not been seen as an important aspect of Canadian northern policy.

By 1960, it was unrealistic to postulate any military role for a northern patrol vessel other than "flag showing" which is a legitimate and traditional military function. If war were to come to the polar sea, it is clear that the engagements in 1960 would have been fought under the ice, not in it.[2] The entry into service of USS Nautilus in January, 1955

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[1] D Hist, 73/243, "Draft Ship Characteristics Arctic Patrol Vessel" 1 February 1961.

[2] The idea of using a submarine for under ice polar exploration may have originated in the seventeenth century with John Wilkins, the Bishop of Chester who wrote of the "many advantages and conveniences of a submarine as 'tis safe from Ice and great Frosts which do so much to endanger the Passage toward the Poles'". See Vilhjalmur Stefansson, The History of the Idea, in Sir Hubert Wilkins, Under the North Pole (London, Brewer, Warren Putnam, 1931). Two German explorers working independently, Anchutz-Kamfe in 1901 and Maybaum in 1903 actually undertook construction of submarines with the intention of attempting to reach the pole under the ice, surfacing for air and battery recharging in leads or polynas. Neither attempted the voyage. See "A New Plan for Reaching the North Pole". Geographical Journal, Vol. 17, No. 4, 1901, pp. 435-436 and A. W. Maybaum, I'm Unteseeboot zum Nordpol (In a Submarine to the North Pole) Berlin, np. 1903. Stefansson claimed that by the early 1920s he had thought out

represented a new potential for polar operations. Being nuclear powered, the boat was practically unlimited in submerged range. Surfacing in leads would be done only if the captain wished to do so, and not through necessity. The early nuclear boats were capable of speeds in excess of 20 knots and could submerge to a very great depth and remain highly manoeuvrable. With these characteristics it was thought that a nuclear boat could safely pass beneath the deepest ice ridge. There were a few naval and political enthusiasts in the mid 1950s who were strong advocates of attempting a submerged polar transit, but the United States Navy approached the idea with care. The dominant viewpoint cautioned against risking the only nuclear powered vessel in the fleet in a completely unknown area.

By 1957, however, the polar advocates were beginning to gain increasing numbers of supporters, and that summer, Nautilus made her first polar attempt and managed to beat within 180 miles of the pole before being forced to turn back by sub surface ice pressure ridges. Undaunted,

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solutions to most of the practical problems associated with submarine operations in the Arctic. He claimed that his publishers forced him to excise sections dealing with a polar submarine voyage from drafts of "The Arctic as an Air Route of the Future" in the National Geographic August, 1922 and The Northern Course of Empire, 1922. See Wilkins, pp. V and 14-17. In 1931 Sir Hubert Wilkins, the British arctic explorer actually attempted an undersea voyagle to the pole, but damage to the submarine in transit to the edge of the pack prevented the vessel from submerging. See "Sir Hubert Wilkins' Submarine Expedition 1931" Polar Record, Vol. 1, No. 8, January 1932, p.5.

The first actual under-ice submarine voyages were carried out by the Imperial Russian Navy in Vladivostok Harbour in 1905 and 1908. See V. G. Redanskiy, "Pervyye podlednyye plevoniya podvodnykh lodok na Dol'nem Wostoke", Izvestiyo Vgesozuynogo Geografic Leskogo, Obshchestua, Vol. 100, No. 4, 1966, pp. 368-370. During the Russo-Finnish War, a Soviet submarine made a thirty mile transit under the ice of the Baltic, see V. V. Tikhomirou, Nebo zakryto J'dami, (The Sky is Covered With Ice), Moscow; 1965. German U-Boats operating against allied arctic convoys to Russia made use of the edge of the polar pack as a shelter from destroyer attacks. Following the end of the Second World War, the United States Navy carried out a few experiments with conventional submarines operating on the edge of the arctic pack. No major polar transits were attempted, or it would appear, even contemplated.

she tried again the following year and on 3 August, sent her now famous message, "Nautilus 90 North". In subsequent years, the United States Navy established other important milestones in under-ice operations. In March, 1959 the USS Skate actually managed to surface at the pole. In 1960 and in 1962, USS Seadragon and USS Skate, respectively, made submerged transits of the Northwest Passage.[1]

In addition to the United States, other nations who had developed nuclear submarines also undertook polar cruises. In 1962 the USSR submarine Lenisky Kamsomol[2] succeeded in reaching the pole, and in 1971 HMS Dreadnought, did likewise.[3] What is important to this study is the impact on Canada and the Canadian North of the opening of the polar seas to year round naval operations, and the potential commercial and scientific advances following on from developing technology.

The military was quick to grasp the strategic significance of the successes of the nuclear submarines. Even before Nautilus had reached the pole, an American officer, experienced in both submarines and polar work, had noted that, "in spite of the natural defences posed by the elements, the Soviet Union is extremely vulnerable from the North". He argued that nuclear attack submarines could play havoc with Soviet shipping along the northern route whilst remaining virtually invulnerable to attack themselves.[4] Commander Anderson, the Captain of Nautilus, foresaw an even

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[1]See Commander William R. Anderson, Nautilus 90 North (London: Hodder and Stoughton, 1959); Commander James Calvert, Surface at the Pole (London: Hutchison & Co., 1961); G.P. Steele, Seadragon: Northwest Under the Ice (New York: E. P. Dutton, 1962).

[2]M. S. Korenevskiy, Kurs-nord, idem podo l'dami (Course - north we are going under the ice) (Moscow: Izdatel'stuo "Sovetskaya Rossiya", 1967).

[3]P. Wadhams, "British Submarine work in the Arctic, 1971", Polar Record, Vol. 15, No. 99, September 1971, p. 923.

[4]Commander G. W. Kitteredge, "Under the Polar Cap: A Voyage That Must be Made", USNI Proceedings, Vol. 84, No. 2, February 1958.

more significant strategic role for nuclear submarines operating in the Arctic Ocean. He wrote that:

> When the nuclear powered, missile firing submarine became a reality, the Arctic, dominating over three thousand miles of Soviet coastline, would be an ideal launching spot.[1]

The polar cruise of the USS Skate in 1959 was reported to be, in the main, a scientific expedition, during which experiments were made to check the feasibility of submarines breaking through the ice of the polar pack.[2] The military significance of such a capability, although unstated in the article cited above, was that if gaps in the polar pack could be found, then a submarine could launch strategic missiles from a polar war station. The American strategic thinking of the late 1950s and early 1960s was closely tied to existing technology. Thus in 1958, a US Navy officer who had served in submarines during the Second World War and in arctic icebreakers in the post-war period wrote:

> With our lesser interest in the far north and the greater distances of centers of population and industry from the Arctic, any threat to the free world from Soviet under-ice submarines is negligible.[3]

The author was writing before the operational deployment of submarine launched ballistic missiles (SLBM). The cruise missiles of the day were very limited in range and a launch from anywhere under the polar pack could not have reached the continental United States.

Other Americans were less sure of their invulnerability. In 1962 following the development of nuclear submarines armed with ballistic missiles (SSBN) one wrote to the effect that while the Soviet Union remained

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[1] Anderson, p. 43.

[2] Lcdr. W. H. Layman, "Skate breakthrough at the North Pole", USNI Proceedings, Vol. 85, No. 9, September, 1959.

[3] Cdr. R. D. McWethy, "Significance of the Nautilus Polar Cruise", USNI Proceedings, Vol. 84, No. 5, May 1958, p. 35.

much more vulnerable to an attack from submarines in arctic waters, a Soviet SSBN could, in theory, transit the Arctic Ocean, make its way through the Canadian Archipelago, enter Hudson Bay and from there effectively engage targets as far south as Norfolk, Virginia, or St. Louis, Missouri.[1] Here too the author was writing in terms of the range of the first generation of SLBM. Subsequent developments have since negated the necessity to approach the "enemy" so closely. The theme of the article cited was that the NATO countries with northern frontiers should combine to develop a capability for anti-submarine warfare in the Arctic. In that area, conventional ASW surface ships and aircraft, operating alone or in conjunction with each other were completely ineffective. The writer envisioned aircraft as the main means of anti-submarine defence in the North, but he also felt that anti-submarine nets might be necessary for Hudson Bay.[2]

The year 1960 marks the "end of the era of experimental submarine operational procedures in the Arctic".[3] By this date the USN had developed the necessary equipment and experience to operate nuclear boats under ice in summer and winter. In addition they had worked in both deep and shallow waters as well as among icebergs and through island passages. In mid November of the same year, the USS George Washington, an American Fleet Ballistic Missile submarine departed on the first deterrent patrol, armed with 1,200 mile-range Polaris A1 nuclear missiles. Given the limited range of the first generation SLBM, it is not unreasonable to speculate that her

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[1]G. V. Brown, "Arctic ASW", USNI Proceedings, Vol. 88, No. 3, March 1962, p. 55.

[2]Ibid.

[3]Richard Boyle, "1960: A Vintage Year for Submarines", USNI Proceedings, Vol. 96, No. 10, October 1970, p. 38.

war patrol area may have been in the arctic seas. The United States has naturally never revealed the location of patrol stations nor the targeting program of the sea-based deterrent, but the Soviet Union appears to have assumed that the American boats might well be in the Arctic Ocean from whence they could strike at Soviet strategic forces located deep in Siberia. It would seem that the Soviet Navy quickly began to develop the procedures to react to this possible threat from the North. When the Soviet Union announced in 1963 that the Leninsky Komsomol had reached the North Pole the previous summer, the purpose of the cruise was stated as:

> to go under the arctic ice to the North Pole and there to take a battle station having the mission of preventing the underwater rocket-carrying ships of the 'enemy' from using the ice of the North Pole for launching a rocket strike[1]

Before one can fight in an area one must have the ability to operate there. In all probability the Soviet Navy was going through the learning process that the USN had endured between 1957 and 1960. The Soviet Union probably quickly mastered the art, for Soviet literature is full of reports of various under-ice cruises in the mid 1960s. It is also reasonable to assume that hunter-killer submarine attack procedures in the Arctic Ocean were also worked out. That this was done was implied in a Soviet article written in 1963 wherein a journalist embarked on an arctic patrol wrote:

> Other submarines, we know, are creeping up to the North Pole from the other hemisphere. They are looking about for placed from which Polaris missiles could be launched. They should realize that this is playing with fire.[2]

Since the Soviet Union could be expected to deploy their own SSBNs by the mid 1960s, and since they too were gaining vital polar experience with their attack boats in the interval, it appears that the United States Navy

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[1]Cited in Ibid., p. 39.

[2]I. Nekhamkin, "On Board a Nuclear Submarine" Soviet Union, No. 159, 1963, p. 41.

carried out hunter-killer experiments in the Arctic in 1962. In that year

> Significant tactical exercises were conducted with both submarines (USS Skate and USS Seadragon) proceeding in company over a track of about 1,800 miles in the Central Arctic . . . . Weapons and sonar tests were conducted in the Beaufort Sea . . . .[1]

Military operations of Soviet and American submarines in Arctic waters have been cloaked in secrecy since the early 1960s. The following analysis, therefore, is purely speculative. It would seem likely that during the period when SLBM ranges were in the order of 1,200 to 1,500 miles, both nations probably deployed SSBNs into the Arctic, and at the same time continued to develop their ability to detect and destroy opposing SSBNs with hunter-killer submarines. Despite all the progress that has been made in polar operations, however, the perpetual ice cover of the Arctic Ocean renders that area a much more hostile environment for submarines than more temperate seas. Security for an SSBN, and hence the entire sea borne deterrent of both the United States and the Soviet Union, lies in the ability of the submarines to reach and maintain station in a patrol area undetected. Each succeeding generation of SLBM has opened up vast ocean areas as suitable patrol stations. A missile range increase on the magnitude of 1,000 miles roughly equates to another million square miles of ocean becoming a suitable launch area. Given these considerations, it is likely now that neither American nor Soviet missile submarines need to use the Arctic Ocean. When an Ultra Long Range Missile System (ULMS) becomes operational, the sea based deterrent forces should be in the enviable position of being able to engage their targets as soon as they leave their home ports.

Despite the tremendous developments that have been made in ASW

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[1]Boyle, "A Vintage Year", p. 39.

since the end of the Second World War, it is still generally conceded that the submarine has the advantage in war operations. This is particularly true with respect to SSBNs who have no interest in shipping lanes or tactical targets. All these ships need is a place to lurk, and the ice free oceans of the world represent a fantastic hiding ground. Contemporary ASW resources consist of fixed underwater sonar arrays, surface ships, aircraft, and submarines. Of these, only ASW submarines are effective in the High North, although experiments with fixed array sonar in ice filled waters continue. At present, ASW forces would be at a disadvantage in the polar seas since only a few of the standard resources can function there. Therefore, a major technological breakthrough in conventional ASW might well force SSBNs to seek again refuge under the polar pack. In the same vein, the Arctic Ocean could be important to nuclear submarines of the deterrent forces of both sides as a transit zone for the redeployment of forces, or as a secure means of permitting an SSBN to take up its war station. Any attempt by either the United States or the Soviet Union to interfere with the transit routes of the other would have serious effects on deterrent stability and would represent a major shift in strategic perceptions and, perhaps, intentions. Such a move could not rationally be made lightly nor is it likely that it could be made quickly because of technical limitations imposed by the arctic environment.

While the nuclear submarines of the United States and the Soviet Union conquered the Arctic Ocean, the Royal Canadian Navy sat on the sidelines, a seemingly disinterested spectator. After the transfer of Labrador to the Coast Guard, the only Canadian warships to appear in the North were on summer training cruises into Hudson Bay, and after 1962, even these ended. Deeply committed to anti-submarine warfare, the RCN concentrated on developing variable depth sonar, helicopter carrying

destroyers, and a high seas hydrofoil. None of these could be used in ice filled waters, so with a few exceptions the navy forgot about the North and concentrated on the North Atlantic.

The United States Navy established a policy of co-operation with Canada that reflected the fact that their boats were operating in Canada's back yard, if not in territorial waters. (At the same time, Canada's declared territorial limit was three miles, and since no commercial or military use had ever been found for the Northwest Passage, the Parry Channel route via M'Clure Strait could have been classified as high seas). When the USS Sargo reached the North Pole in the dead of winter 1960, Commodore O. S. C. Robertson, Labrador's original commanding officer, was aboard. This officer was also in USS Seadragon in the capacity of observer and adviser when that ship made her historic transit of the Passage through the Canadian Archipelago in the summer of the same year.

Canada took note of the early pioneering nuclear submarine voyages and applauded their successes. Similarily, a few Canadians expressed concern over the threat of Soviet SSBNs prowling about the arctic coast of North America. The massive Soviet submarine fleet had often been seen as a serious threat to North America. When Nikita Khrushchev in one of his more bellicose statements said that rocket firing submarines located in Hudson Bay could demolish targets anywhere in North America, Canadians were forced to admit that they did after all, have a third ocean front. A joint Canadian-American defence research station located at Churchill was reported to be working on technical aspects of under-ice submarine detection, but the problems far outnumbered the feasible solutions.[1]

A few voices cried in the wilderness that Canada should obtain a

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[1] Vancouver Sun, 9 November 1959.

small fleet of nuclear submarines for the purpose of arctic patrol and conventional operations. Chief among these was Michael Forrestal, the long-time Progressive Conservative Member of Parliament for Halifax, Canada's principal naval base. Throughout the 1960s Forrestal repeatedly called for a start to be made on a Canadian nuclear fleet--if not home built, than purchased directly from the United States. It is probable that Canada had neither the technology nor the industry to build nuclear submarines at anything like an acceptable cost. Attack submarines might have been purchased from the United States at any time after the mid-1960s, but again, the cost was seen as being prohibitive. In any case, it is most unlikely that Canada would have obtained such a costly weapon system mainly for northern patrol work at a time when the governments of the day showed little interest in the North. The advisability of acquiring nuclear submarines was debated in the House of Commons at some length in 1959, but there was no mention of the Arctic Ocean in the debate. The government's position was that the concept of using a nuclear submarine in the anti-submarine role had yet to be proven, and in the interval, Canada was watching closely developments in the United States and Great Britain.[1] In the main, it would appear that Canada was prepared to leave to the super powers the heady world of nuclear war in the polar seas.

The non-military potential of nuclear submarines in the North is as interesting as possible war scenarios. Once the major navies proved that polar operations were feasible, a whole world of peaceful applications of this knowledge emerged. The most important of these envisioned new intercontinental shipping routes, the use of submarines for resource exploitation, and finally, as a platform for pure scientific research in

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[1] Debates, 2, 3 July 1959, pp. 5371, 5384, 5430.

the Arctic Ocean. Of the three, only the last has been developed to date.

The most intriguing idea relates to the use of the polar seas as a commercial route. The western world has been fascinated with the idea of sailing between the Atlantic and the Pacific via the Arctic Ocean for nigh onto five hundred years. It is only within the 1960s that the means has existed to make this dream a reality. That the means was finally at hand was apparent immediately upon Nautilus' completion of her historic voyage. The ship was awarded the first Presidential Unit Citation ever granted in peacetime, reading in part:

> This voyage opens the possibility of a new commercial seaway, a Northwest Passage between the major oceans of the world. Nuclear powered cargo submarines may in the near future use this route to the advantage of world trade.[1]

The prospect of a new and important sea route was developed by Commander Anderson, writing in the National Geographic. He noted that the surface route from Tokyo to London was 11,200 nautical miles but a nuclear powered submarine sailing via the Arctic would only travel 6,500 miles. Similarly, Seattle to Oslo is 9,500 miles by the conventional route but only 6,100 by the pole. While Anderson was prepared to argue that the route had been proved workable, he did not feel that commercial exploitation could begin until additional studies were made in all seasons. He also felt that various alternate routes should be explored.[2]

Several nations undertook design or feasibility studies of nuclear-powered submarine cargo ships. The Electric Boat Division of General Dynamics Corporation, the builders of Nautilus and Skate, received a contract from the U.S. Federal Maritime Administration to consider the

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[1]Cited in Richard Boyle,"Arctic Passages of North America", USNI Proceedings, Vol. 95, No. 1, January 1969, p. 49.

[2]Cdr W. R. Anderson, "The Arctic As A Sea Route Of The Future", National Geographic, Vol. 115, No. 1, January 1959, p. 24.

design of a 20,000 ton and a 40,000 ton capacity submarine tanker. The Japanese announced in 1959 that they were considering a 100,000 ton design. Despite this theoretical interest, however, no submarine freighter or tanker has yet been launched. The reason for this undoubtedly lies in economics. While the polar route may offer a time and distance saving on the order of thirty to forty per cent, the capital costs of actually building a nuclear-powered commercial vessel are much higher than costs of a conventional surface ship. In addition, even if a commercial submarine were launched as a national venture, the insurance rates for a ship plying the polar route, for the first few years at least, would probably be ruinous. A sea route that no ship can afford to use has limited commercial importance.

Much the same situation exists with respect to the second contemplated use of commercial submarines--that of a means of exploiting mineral resources of the North. Richard Boyle suggested in 1969 that nuclear submarines could be used to move northern oil and other minerals that might be found in the Canadian Arctic to southern markets.[1] Lieutenant Commander J. T. Strong of the United States Navy argued much the same case in 1961, noting in particular that the mineral resources of the Queen Elizabeth Islands in the High Western Arctic could best be exploited by nuclear submarine freighter.[2] Commodore O. S. C. Robertson wrote in 1966 that if oil were discovered in the Canadian Arctic, the most economical way to move it to market might well be by means of a submarine tanker.[3] In 1970 with the

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[1]Boyle, "Arctic Passages", pp. 50-52.

[2]J. T. Strong, "The Opening of the Arctic Ocean", USNI Proceedings, Vol. 87, No. 10, October 1961, p. 64.

[3]O. S. C. Robertson, "Transport by Submarine in Arctic Waters", North, Vol. 8, No. 5, September-October, 1966.

development of the Alaskan North Slope oil fields well underway, General Dynamics proposed to the five major American oil companies involved in the project that they acquire a fleet of submarine super tankers to transport the oil to the continental United States. By 1970 General Dynamics' concepts had grown tremendously over the comparatively modest vessels they were considering a decade previously. They were now talking of ships 900 feet long each capable of carrying 170,000 tons of oil. In order to fully exploit the ten to thirty billion barrel North Slope resource, General Dynamics suggested that a fleet of eighteen of these monsters would be required by 1980. The advertised advantages of the submarine super tanker were the facts that oil could be handled at sea temperature and that precise delivery schedules could be kept. On the negative side, however, there were many serious problems that had to be solved before the submarine tanker could be considered as a workable alternative to other proven means of oil shipment. Since the North Slope waters were relatively shallow, it was suggested that loading points for vessels would have to be many miles off shore, and a complete new technology would have to be developed for such installations.[1] Like proposals for oil carrying dirigibles and mammoth aircraft, the submarine tanker has remained only a concept--a concept that has not proven to be economically attractive when compared to the traditional means of transporting oil such as surface tankers and pipe lines. The same arguments may be laid at the feet of proposals and designs for nuclear submarines configured as freighters or as ore carriers. They offer a number of theoretical advantages, but promise to be economically competitive only if a series of very formidable

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[1] J. E. Truitt, "Moving Alaska's Oil by Submarine Tanker", Navy, Vol. 75, No. 3, March 1970, pp. 80-81.

technical and human problems can be solved first.[1]

The third aspect of the peaceful use of nuclear submarines in the North has been developed to a considerable extent. As an American oceanographer said, the development of the nuclear submarine represents "a major breakthrough . . . in the techniques of Arctic exploration and oceanographic research".[2] The early American penetrations into the northern seas were all almost purely exploratory or scientific in nature. In particular, the 1959 Skate expedition involved an extensive program of pure scientific research.[3] Commander Anderson maintained that much scientific data was collected in the 1957 and 1958 cruises and that during the 1959 polar transit, more than 11,000 individual soundings were recorded. In addition, both Nautilus and Skate measured salinity, temperatures, and ice thicknesses along their courses, "giving valuable clues to the movements of water in the Arctic Basin".[4] While these studies, and others were primarily made with a view to perfecting the military techniques of submarine under-ice operation, it is undeniable that the basic data could have many other commercial and scientific applications.

Mr. A. E. Molloy, a member of the United States Navy Hydrographic Office, suggested that the nuclear submarine represented the ideal arctic research platform since it could go more or less anywhere and provided a controlled environment independent of outside support. He maintained that more was learned about the Arctic Ocean between 1957 and 1960 than had

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[1]See P. R. Crowe, "The Submarine Ore Carrier", Paper delivered at The Royal Institution of Naval Architects, London, 28 March 1962.

[2]E. C. La Fond, "Arctic Oceanography by Submarines", USNI Proceedings, Vol. 86, No. 9, September 1960, p. 91.

[3]Ibid.

[4]Anderson, "The Arctic as a Sea Route of the Future", p. 21.

been learned in the previous 75 years. He advocated a carefully thought out research program to accommodate the needs of the Defence Department, other government agencies, and private institutions. He suggested that a nuclear submarine be specially fitted as a floating (submerged ?) laboratory able to support surveys, basic research, and applied research.[1] While Molloy's thesis certainly has merit in terms of increasing knowledge of the polar seas, the USN has not rushed to dedicate a hundred million dollar nuclear submarine exclusively to research work. What continuing research that is done, it would appear, tends to be ad hoc programs undertaken by embarked scientists during the course of multi-mission cruises. It is unlikely that any other department of government and certainly no private institution would be in a position to purchase a nuclear submarine for research purposes. Even if funds were made available, maintenance and crewing would remain as major obstacles to the nuclear submarine laboratory concept ever becoming reality. It is possible, however, that in the next few years, the early nuclear boats will come to the end of their operational military life and may thus become available for research purposes. Still, the perplexing technical problems of an aged reactor, and the more mundane matters of maintenance and staff would remain. Like the nuclear freighter and the nuclear resource transporter, the nuclear submarine laboratory remains a theoretical possibility confounded by the realities of economics and technology. In many ways, the "boom" of interest in the peaceful use of nuclear submarines in the Arctic that characterized the late 1950s and the 1960s, has turned out to be the "bust" of the 1970s. To the North, that is an old story.

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[1] A. E. Molloy, "Arctic Science and the Nuclear Submarine", Arctic Vol. 2, June 1962, pp. 87-91.

CHAPTER VIII

NATION BUILDING II:

The Post War Years: 1945-1964

The generation after the Second World War marked the high point of military presence and activity in the Canadian North. Yet in reality, little of this activity was directly related to a specific military threat. During the bomber era, infantry troops trained to snuff out "lodgements" and the radar stations of the Distant Early Warning Line kept their long polar watch. These two organizations, however, accounted for but a small portion of the military activity in the region. A host of other programs brought the soldiers, sailors and airmen of Canada and the United States in the North.

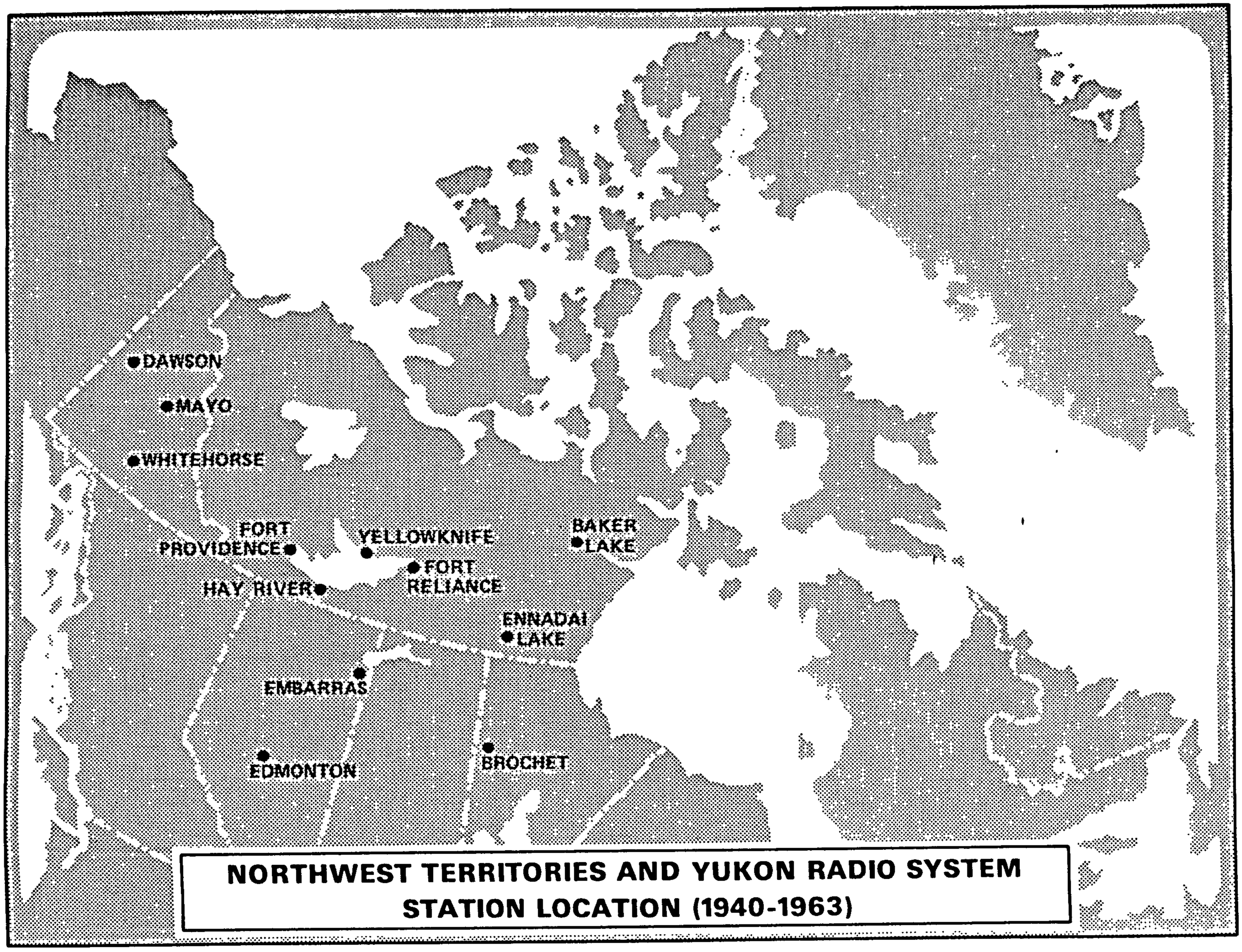
As has been seen, the long-neglected North was thrust into prominence with the coming of the Cold War. With this prominence came an honest military interest in the area. It was generally recognized in all branches of the service that existing knowledge of the North was imperfect and that special techniques and equipment were required to operate there. In the absence of specific operational roles, many military elements set about learning how to live and work in the isolated northern environment against the day when a wider military threat might develop. As a corollary to these programs, steps were taken to establish necessary support facilities to permit these activities to be carried out with greater efficiency and safety.

An important by-product of this activity was a major contribution

by the military to general knowledge about the North and the establishment of many important components of social infrastructure. It would be a serious error to assume that all these military contributions to northern development were coincidental. There are three categories into which all military activity during the 1945-1964 period could be grouped. The first is that small class of activities that were undertaken for purely military purposes and the development spin-off was truly accidental. By far, the largest category is the second class wherein military projects were executed in a manner designed to optimize developmental aspects. The third group are those government designated activities undertaken purely to meet the needs of national development, and which promised no particular value to the military.

The Northwest Territories and Yukon Radio System

The outbreak of the Second World War disrupted the NWT & YRS, as it did most other Canadian institutions. In the autumn and winter of 1939, calls were made upon the system to support mobilization by providing . men and materials. In the final analysis the system was a training facility for the RC Sigs and in the crisis of war, the army did not hesitate to draw upon the distant posts to fill its needs. On the other hand, the RC Sigs had acquired a responsibility to the residents of the Northwest. People had come to depend upon the radio facilities over a period of sixteen years and the entire network could not be abandoned overnight. Those stations whose closure would not cause a breakdown in the whole system or whose services could be provided by alternate means were closed and their equipment and personnel were withdrawn to the South. At the remaining stations personnel cuts reduced the level of services that could be provided, meteorological services suffering particularly in



NORTHWEST TERRITORIES AND YUKON RADIO SYSTEM STATION LOCATION (1940-1963)

this respect.[1]

The entry of the United States into the war and the defence projects undertaken by that nation in the Northwest provided an impetus that took the system out of its initial war time slump. To support the Canol project, the United States Corps of Signals established a communications network, but it soon became evident that the American equipment did not have the power or the reliability to handle the traffic on the net. The temporary expedient of patching into the nearest NWT & YRS station for onward transmission of messages was adopted, but in 1943 the two governments agreed that because the RC Sigs were already established at key locations in the Mackenzie Valley and had long experience in northern operations, the Canadian system would provide the main communication grid for Canol. Accordingly, the Corps installed a powerful station at Norman Wells capable of transmitting direct to Edmonton and later took over an American station that had been established at Fort Providence. By the end of the year the NWT & YRS was operating fourteen stations and the System was again in the process of expansion.[2]

The System's role in supporting flying operations was greatly expanded the following year. Flying activities relating to the Alaska Highway, Canol, and the North West Staging Route continued unabated and civil aviation in the Mackenzie underwent a resurgance. The increased level of air activity produced a demand for more and better weather forecasts and the RC Sigs was requested by the Meteorological Department to open stations at Fort Good Hope and Port Radium, and to increase the frequency of weather reports from all other existing stations. Manpower

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[1]Moir, p. 282.

[2]A History of the Northwest Territories and Yukon Radio System, pp. 19-20.

requirements in 1944 were not as critical as in 1939 in the sense that the requirements for a few dozen men to operate the NWT & YRS were insignificant to an army of over a half million men. The RC Sigs also took over small stations that had been established by the Americans at Wrigley, Hay River and Embarras. These developments brought the system back to its pre-war level of nineteen stations. The following year, the main stations at Edmonton, Fort Smith, Fort Simpson and Norman Wells received powerful new 10 KW low frequency transmitters, thus further increasing the System's capacity to support the anticipated northern boom that it was thought would follow the end of the war.

During the war years, the system continued, in the main, to follow its traditional pattern of supporting contemporary activity in the Canadian Northwest. The Canol project replaced the mining activities of pre-war years as the main user of facilities. The system also continued to provide its traditional weather forecasts and commercial facilities for the permanent residents of the North. Wartime programs provided Canada with a surfeit of trained signallers. During the war there was no suggestion made by the RC Sigs that the system's continued value lay in the training it provided to military communicators. The system had become a thing unto itself--a service to the Northwest, which, by tradition, was provided by the Royal Canadian Corps of Signals.

With the coming of peace, the NWT & YRS continued in its now well established pattern of serving the North. Any military, commercial or governmental group that required quick and efficient communications turned to the Royal Canadian Corps of Signals. One could graph the level of development activity in the Northwest simply by studying the various expansions and contractions that the northern signals system underwent over the years. While the post-war experiences of the System differed

somewhat from pre-war and wartime activity in the specific nature of services provided, on the whole, meteorological forecasting, air support, communications for other departments of government, and commercial traffic occupied the bulk of the signallers' time.

During 1946, all the wartime stations continued in operation and new sites were opened at Snare River, north of Yellowknife, and at Baker Lake.[1] The Snare River station was short lived, but its establishment illustrated again the flexibility of the army to respond to reasonable requests. A major hydro-electric power project was to be carried out on the Snare to provide the energy-starved mining interests in the Yellowknife area with a source of cheap and reliable power. To facilitate the construction phase, a radio station was required and on 8 July 1946, the RC Sigs was on the air from the new site. The project was completed in late 1948, but the signallers stayed on until mid 1949 at which time a conventional land line between the power plant and Yellowknife was completed.

During 1948 and 1949, the System was drawn further into the web of the Meteorological Service. The first year weather stations were installed at Brochet in northern Manitoba, and at Fort Reliance at the eastern tip of Great Slave Lake. Both of these stations were transmitting weather data by freeze up, but their establishment was costly in both men and support equipment. The RCAF had to be called on to fly in construction crews, operators, and equipment, although a barge brought in most of the heavy plant to Fort Reliance. Both of these locations were noteworthy because of their isolation. At Brochet the population consisted of two traders, four missionaries, a game warden and a fluctuating group

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[1] Ibid. Unless otherwise noted all data in this section is taken from this source, pp. 24-58.

of up to fifty Cree and Chipewyan Indians who came and went with the hunting and fishing seasons. At Fort Reliance, the entire population consisted of two members of the RCMP who used the post as the base of patrol operations at the east end of Great Slave. The following year, the NWT & YRS reached its nadir of isolation when it responded to a Meteorological Service request to establish a post at Ennadai Lake. At Ennadai, there was nobody except the four man signals detachment. This forlorn post was on the air with regular weather broadcasts by October 1949, but perhaps its most important function during the years the RC Sigs operated the station was the humanitarian role it played in support of the local natives.

The Kazen River Band of Caribou Eskimos had traditionally hunted in the general region at Ennadai Lake, but during the winter of 1949-50, disaster struck when the route of the annual caribou migration changed and the herds by-passed the area. The 45 members of the band were facing starvation by April 1950 when their plight became known to the soldiers of Ennadai. The signallers radioed Churchill for assistance and later arranged for the air evacuation of the band to Neutlin Lake, a hundred miles to the southeast, where game and fish were plentiful. Before the natives could be moved, however, they had to be collected and concentrated at a central pick-up point. The soldiers ranged the area bringing in their starving charges who subsisted on army emergency rations until the aircraft arrived. Had the Ennadai Lake station not been established it is most likely that the whole band would have died of starvation.

By 1951 the Eskimos had drifted back to their traditional hunting ground. In the interval, the government had taken steps to provide them with rifles, ammunition and traps. Rather than relying upon the caribou for their entire subsistence, the natives were now able to bring furs

into Ennadai where the signallers baled them up and shipped them to the RCMP at Churchill. There the police sold the furs, bought food, ammunition and supplies with the proceeds and shipped these to Ennadai where they were distributed. This change in the economic base of the Eskimo livelihood, from complete dependence upon the caribou to a barter economy based on fur trapping, was probably an undesirable side effect of the changed caribou migration patterns. The alternative: cultural purity--and starvation--was even less acceptable in the middle of the 20th century. Although many of the so called "benefits" of white society have ultimately proved to be culturally devastating to northern native peoples, there can be no question that the Ennadai station personnel were on more than one occasion instrumental to the survival of the Kazen Band. Medical services were provided to the best of the detachment's ability and in the spring of 1954, the detachment commander nursed the band through a devastating influenza epidemic. Weather conditions precluded a doctor's landing at the post. Instructions for treatment were radioed to the soldiers who brought their charges through the crisis without a single loss.

The outbreak of the Korean War in 1950, like the war in 1939, put severe demands upon the personnel of the System. By this date the original purpose of the System to provide otherwise unavailable training to army signallers had long since become meaningless. In reality the System was a drain on RC Sigs resources. Since the beginning of the Second World War, the Corps had been operating the necessary trades schools to support all their work. Before a man could be usefully employed in the North he had to be highly trained to operate an ever increasing array of complex equipment. It was also necessary to provide additional instruction in meteorological reporting, and in the operation of the diesel

generating plants that provided the electricity at many of the more remote locations. Still, the RC Sigs clung onto the System. They had a job to do and were doing it well, but sometimes it was only possible to keep operating by curtailing services or by placing heavy long-term demands on the operators.

The requirements for troops for Korea reduced the System to the point where it was operating with only 75 per cent of its authorized establishment. As the demands of an expanding regular army would take up the recruit signaller output for the foreseeable future, authority was obtained to employ civilians to fill some of the vacancies. Qualified civilians who were willing to live in the North were hard to find. The NWT & YRS' position was made even more difficult by the Department of Transport which was expanding its northern radio services and was authorized to pay much higher salaries. Faced with these manpower problems and a steadily increasing volume of radio traffic, the Department of National Defence decided to cut back on some of its stations. Agreement was reached with DOT whereby that Department took over operation of some of the more isolated stations whose sole function was weather reporting. Embarras Lake was turned over in mid 1952 and the others were slated for hand over as soon as DOT could hire men to run them. Ennadai Lake went in 1954 and along with it the inevitable responsibility for the Kazen River Eskimos. Wrigley went the following year and Brochet followed in 1956.

In February 1955 construction began on the Distant Early Warning Line. A tremendous airlift was required to support the construction of the western portion of the project in Canada, from Cambridge Bay to the Alaska Border. As a result, weather messages, air movement messages, and construction related messages increased dramatically. Three hundred

thousand more signals were handled in 1955 than during the previous year, the vast majority of these attributable to the radar construction project. The communications tempo grew with construction activity the following year when a hundred per cent increase in all classes of message traffic was recorded, despite the fact that the western part of the construction phase was completed by the end of July. At the beginning of 1957, the DEW Line's own internal radio system came into operation and this relieved much of the remaining pressure from the NWT & YRS. Much to the disgust of many veterans of the RC Sigs, the civilian firm holding the DEW Line contract offered fabulous salaries by the standards of the times and hired numerous civilian and military operators away from the NWT & YRS.

That another program would emerge to replace the DEW Line traffic was perhaps inevitable. In 1957, the project was the construction of a new townsite for the village of Aklavik. Aklavik, sited in low lying ground in the Mackenzie Delta was subject to regular floodings and was an unsuitable site for further urban growth which the Department of Northern Affairs and National Resources wished to foster in the area. Accordingly it was decided to relocate the community to higher ground 35 miles to the east. The new town was named Inuvik in 1958, but during 1957 it went by the more prosaic title of Aklavik East Three. The radio traffic associated with this major construction project was largely responsible for the System recording its all-time high of messages passed in one year--3,172,628.

The cost of operating a system that could handle this volume of traffic however, was proving to be increasingly unacceptable to the Canadian Army. By 1957 this amounted to 1.5 million dollars annually. In 1957 commercial traffic had brought in a revenue of 200,000 dollars, and had government messages been computed at the commercial rate, another five million dollars would have been realized. Unfortunately, from DND's

point of view, all revenues went to the Receiver General of Canada and not to the Department of National Defence. A detailed traffic analysis carried out in 1956 revealed that DOT was the major user of the System, with over ninety per cent of all messages being concerned with that department's affairs, DND on the other hand, accounted for only four per cent of the total message traffic and most of these related to the internal administration of the System. In an attempt to redress this financial anomaly, DND requested that it either be relieved of responsibility for running the network, or else that costs be shared by DOT. A cabinet decision taken in September, 1957 directed that the Army hand over the System to DOT.[1]

It would appear that those signallers who had been involved with the NWT & YRS for many years regretted the government's decision when it dawned upon them that they were to leave the North and give up control of the System that had been so important to northern life for over three decades. The actual handover was done on a station-for-station basis and took over two years to accomplish. In September, 1958 the detailed inventories and procedures for handover were complete and Fort McMurray, Alberta joined the DOT net. Before the year ended, Fort Chipewyon, Fort Smith, and Hay River were transferred. By the end of 1959, Dawson and Mayo, the two original stations, and Port Radium and Fort Resolution remained. On 25 March, the last station, Resolution, changed hands and the Northwest Territories and Yukon Radio System quietly vanished from the northern scene.

By all accounts, most northerners were sorry to see them go. At

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[1]Moir, p. 284. Like most post-war documents, official correspondence relating to the decision to transfer the System to DOT, the arguments used and the army reaction to the decision are not open sources.

a ceremony held at Yellowknife in November 1959, northerners of all persuasions and backgrounds said their formal good-byes. Letters poured into System Headquarters from airlines, transport companies, mining firms, other departments of government and private individuals, all thanking the RC Sigs for the work of years and expressing regret that the soldiers were leaving. Their contribution to northern development, northern life, and northern society over the years was not insignificant.

On the whole, the signallers of the NWT & YRS entered fully into the spirit of northern life. They gave much more than basic communications services, which were extremely important in themselves. Signallers acted as postmasters, and magistrates. They ran airfields and weather stations. Between 1949 until 1958 when the Canadian Broadcasting Corporation took over the job, signallers voluntarily ran a rebroadcast service of commercial radio programs in the larger communities. Signallers supported search and rescue operations and vice-regal visits to the North with mobile and efficient communications to the "outside". Upon occasions they acted as special police constables and, more mundanely as doctors, nurses and midwives. The Royal Canadian Corps of Signals gave much to the North. The full story of their accomplishments is yet to be chronicled.[1]

The Alaska Highway

When peace came in the summer of 1945, the future of the great wartime highway to Alaska was by no means clear. By the terms of the

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[1]The Royal Canadian Corps of Signals Museum at Vimy Barracks, Kingston, Ontario, holds most of the original documentation produced by the NWT & YRS. Unfortunately, to date, none of the holdings have been catalogued. I have brought to the attention of the Public Archives of Canada that in the monthly diaries kept by all station commanders, and other documents, there lies the raw material of a major social history of the Canadian Northwest.

original international agreement, the United States was committed to maintaining the road for six months after the war's end at which time it was to be transferred to Canadian control. Canada had the option of incorporating the highway into the national road grid, but was not legally committed to do so. The Dominion had the choice of simply abandoning it on the grounds that it was a wartime measure that the return to peace had rendered superfluous. If Canada did opt to keep the road in operation it had been agreed that there would be no "discriminating conditions in relation to the use of the road as between Canadian and U.S. civilian traffic".[1]

The singling out of civilian traffic is important. In the original negotiations, the PJBD had recommended certain post-war rights for U.S. military traffic to and from Alaska. The Canadian government had declined to commit itself to the post-war military situation, but stated that it was prepared to give due consideration to any future PJBD recommendation on the subject. The matter was dropped from the original agreement. The United States government raised the issue again in March 1943, expressing "a desire to extend the interpretation of the original agreement in regard to post-war military use".[2] Canada again declined to do so. Towards the end of 1944, the American government began pressing Canada to agree to take over and maintain the highway, but in July 1945, Canada was still considering the proposition.[3]

In the interval the Canadian Army in the form of the Royal Canadian

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[1]D Hist, 348.013 (D1), U.S. Defence in Canada, "United States Defence Projects in Northeast Canada", General Staff Memorandum 11 July 1945 (henceforth "U.S. Defence Projects").

[2]Dziuban, p. 221.

[3]"U.S. Defence Projects".

Engineers (RCE) entered the debate. The military case was that if and when the highway were taken over by Canada, it should become an army responsibility. The Royal Canadian Engineers, it was argued, could run the system efficiently and at the same time use it as a means of peace-time training for gaining experience "in connection with large scale engineering works".[1] Despite all the prophecies of post-war development that had accompanied the construction of the highway during 1942-43, it was still not clear in Canada that the advantages in keeping up the road would have merited the cost. The government's focus of interest remained the Northwest Staging Route, which, it was thought at the time, would develop into a major routeof international air traffic in the post-war world. The importance of the highway in supporting airway operations had been clearly demonstrated during the war, thus providing an incentive to the government to keep it in operation.

The other side of the coin was American concern over the future security of Alaska. It was evident that the United States did not want to have to embark on another crash construction project if the changing international situation were to produce a new threat to the northern territory. A bill introduced in the United States House of Representatives in the summer of 1945 was interpreted in Ottawa as reflecting the official American position, when it called for the creation of a board to be known as the Alaska International Highway Commission. Another American official spoke to the effect that

> A properly controlled air route to Alaska is considered indispensable to the permanent defence of the continent. . . . The only feasible way to properly provide these necessary items to a controlled airway (i.e. fuel supplies, auxilliary strips, weather stations, etc.) is a highway generally along the same route.[2]

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[1] Ibid. [2] Cited in "U.S. Defence Projects".

It is evident that the United States was prepared to bring considerable pressure to bear on Canada to keep the route open, for the highway was seen in the United States as an important feature in the defence of Alaska. Inasmuch as it was possible to differentiate between national defence and continental defence, the road was not significant to Canada. However, the magnitude of American interest when compared to that of her northern neighbour was such that Canada, in all probability, had little choice but to go along with American wishes. From that point of logic, it was but a short step to give responsibility for the highway to the Canadian Army. Here there was also a strong precedent, in the form of the NWT & YRS, for military involvement in the operation of basic northern services.

In October 1945, "the Canadian Army was authorized to take over the maintenance responsibility of the Highway until such time as this responsibility might be assumed by a civilian department."[1] The official handover date was fixed for 1 April 1946. In the interval the Canadian Army began to come to terms with the burden it had so willingly taken on. In January and February, advance parties were dispatched to the North to familiarize themselves with the road and to study the American system of maintenance. In Ottawa, staff officers were deciding upon the size of the force that was required and the myriad of other technical problems that had to be solved prior to the actual change of control. By mid-February, the outline plan for the take-over was complete. The Alaska Highway became known to the Canadian Army as the Northwest Highway System (NWHS). Arrangements were made to take over American equipment, accommodation facilities, and stores. Contracts were made with civilian agencies

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[1] DND Report, 1946, p. 25.

to provide needed services. Land leases were re-negotiated. It was estimated that the capital cost of just the take-over would be in excess of 5.7 million dollars.[1] The American experience had indicated that it would be wise to permit the troops to bring their families with them to the North, and plans were made to build married quarters in a new suburb on the plateau above the townsite of Whitehorse.[2]

Meanwhile, in the North, the engineer advance party was surveying with some dismay the job they were faced with. The senior officer of the group, Lieutenant Colonel J. R. B. Jones wrote of his first impressions:

> We took over a strange unknown ribbon of road covered with snow. We knew the vehicles and equipment left to use were old and worn and needed immediate replacement (they aren't replaced yet). We had no no married quarters and I, like most of the army up there, had been home only a few months after 5 or 6 years separation. It looked grim. We read the records of how the rivers rose suddenly in the spring and took out dozens of bridges, we were told of flash floods that spring from mountain slopes to wash out miles of highway. It looked grimmer. We took another look at the old and decrepit road machinery, the tremendous task of sorting out warehouses full of unlisted tools and spare parts, and the way our proposed establishment had been pared down. It looked hopeless.[3]

At the time of take-over, the Alaska Highway was still a military road. Civilians wishing to use the route had to show evidence that their trip was really necessary and also meet certain rigid standards of vehicle serviceability prior to being given a travel permit. In early 1946, the only hotel north of Fort Nelson was at Whitehorse--six hundred miles distant. There was a similar lack of garages and filling stations.

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[1]D Hist, 112.352 009 (D88), Financial Policies NW Highway System, "Report to CGS by QMG" 13 February 1946; "Minute to Cabinet", 12 January 1946.

[2]Lieutenant Colonel J. R. B. Jones, "The Alaska Highway", ms unpublished, February 1948.

[3]Brigadier J. R. B. Jones, "The Contribution of the Armed Forces to the Economy of the Yukon" (Speech to Whitehorse Board of Trade), 12 January 1960.

The engineers' task was in reality much more complex than just maintaining the 1221.4 miles of highway that lay in Canada. Over 200 miles of access roads leading to the seven emergency landing strips spaced along the highway also had to be kept open, as did the airfields themselves. There was also a requirement to keep open during summer the 120 miles of secondary road from Haines, Alaska to the point where it joined the Alaska Highway at mile 1016. The NWHS troops were also responsible for providing support to RCAF units operating the North West Staging Route. This included supplying rations, hauling ground freight, and maintaining vehicles. At Whitehorse, the army provided a wide range of services and utilities for the use of RCAF and other departments of federal government.[1]

To do the job, the army was allocated about 670 personnel vacancies, of which 450 were to be filled on a permanent basis by civilian employees.[2] The NWHS Headquarters located at Whitehorse included an operational wing which dealt with bridge and road design and an administrative wing which concerned itself with personnel and logistic services for the system as a whole. Under this headquarters came several units, the most important of which was the Highway Maintenance Establishment (HME).. HME, with its headquarters also in Whitehorse was, as the name indicates, primarily concerned with the actual maintenance of the road. The highway was divided into three sectors, and in each sector there were static maintenance camps every sixty or seventy miles. The men working in these camps carried out road patrol, grading, and minor repairs. The sector superintendents and the staff of the maintenance camps were all civilian.

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[1]Jones, "The Alaska Highway".

[2]D Hist, 112.352.000 (D88), "Letter, D.S.D. to D. Org", 17 January 1946.

Major repairs and construction were initially the responsibility of the Road Maintenance Company, RCE. This military unit had a reconnaissance and survey section as well as a bridging platoon and a road construction platoon. All new construction as well as emergency work beyond the capability of HME fell to this unit. In addition to the operational units, NWHS included a full range of support service units such as ordnance, service corps, electrical and mechanical engineers, medical and dental units, and engineer works. The organization, in fact, closely resembled that of an independent brigade, with the combat arms being replaced by the units and detachments of the Highway Maintenance Establishment.

During the years that the army operated the NWHS there was an ongoing program of improvement of the road and a similar upgrading of support facilities and accommodation. There was a lot of work to do. The original survey in 1942 had been pushed through under the urgency of the moment. In many cases the road simply followed local trails which were admittedly not in the best location. The actual road turned over to Canada was, in fact, only an improved pioneer road, and was a far cry from the high quality road that the American civil authority had originally planned. Many sections had been built over unstable ground and would eventually have to be relocated to avoid sagging, frost boils, slides and icing areas. The majority of bridges were of temporary native timber and culverts were built of native unpeeled poles. All of the buildings were classified as "temporary construction" and were not suitable for long term use.[1]

It is important to note that the system improvement was a gradual

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[1]Major A. B. Yates, "Maintaining the Alaska Highway", The Royal Engineers Journal, Vol. 58, No. 1, March 1954.

process. There was never any question of deploying masses of workers or spending tens of millions of dollars in a crash program to revamp the system. One year some of the wooden trestle bridges might be replaced with concrete pilings: another year might see a ten mile stretch of road relocated to a more suitable location. Gradually, corrugated steel culverts were installed all along the highway. While the existence of the highway fostered a modest amount of economic development and resource exploitation in northern British Columbia and the Yukon, there was no great boom of development as some optimists had forecast when the road was built. The two great northern barriers to development--distance and isolation--again combined to limit the profitability of most enterprises.

It could be argued that the most important result of the military's running the NWHS was social. In southern Canada, military communities are traditionally self-contained. It was realized that the situation in the Yukon was considerably different from that in the South, and the military shared its resources with the civilian community to a high degree. Military camps in southern Canada usually have their own schools for dependent children but because the school situation in the town of Whitehorse was so poor, DND funds were diverted to help build a public elementary and high school and a separate (Roman Catholic) school.

Children from the army and RCAF townsites were bussed daily into Whitehorse to the common schools. In addition, the Department of National Defence paid 250 dollars a year for each "military" school child. In the same vein, rather than constructing a military hospital on the base, the available monies were used to help construct a new hospital in Whitehorse. DND shared in the operating costs of the hospital as well as providing key personnel in the operating rooms, laboratories, and X-ray departments. In the area of recreation, military personnel and their dependants were

encouraged to participate in and support such varied activities as sports teams, drama clubs, and Scouts.[1]

At the small maintenance camps scattered along the highway, the social impact of the "military way of doing things" was even more significant. Each camp included a foreman, a mechanic, and from three to five heavy equipment operators. These, all civilians, usually with their families, lived in modern quarters provided by the army. Each maintenance camp eventually provided the core of a small, balanced community. Private enterprises in the form of gas stations, motels, and restaurants sprang up at maintenance camp sites. These sites were attractive locations for an entrepreneur to locate himself and his family. The army had sited a recovery vehicle and ambulance at each camp and these were available to the general public in time of emergency. The Department of National Defence built a small school at each camp site if one did not already exist. The territorial government provided the teacher and the facility was used by all the children in the community. Each maintenance camp was provided with a curling rink, a recreation hall, and a schedule of weekly movies. These facilities, so important to combatting the monotony of northern isolation, were open to anybody living in the community.[2]

The most important issue relating to the highway during the years the military operated in the North was the question of paving. The matter arose as early as 1948 and has periodically emerged for debate ever since. In 1948, a Department of Transport official observed that on a national scale the highway was only of "limited commercial usefulness". This factor, coupled with the very high cost of paving such a long road in

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[1] Jones, "The Contribution of the Armed Forces to the Economy of the Yukon".

[2] Ibid.

isolated country indicated that paving was not practical at the time. The DOT spokesman further stated that it was "very improbable that the task would ever be undertaken except as a defence measure". The Department of National Defence maintained that paving was not necessary for defence purposes.[1] Canada, at the time, anticipated little security threat in the area and indeed, the combat capability of the troops of the NWHS was minimal. The army was simply running what was rapidly becoming a commercial highway for the training value it provided to the engineer troops involved. In point of fact, the unpaved state of the Alaska Highway was not a major factor in limiting its commercial usefulness. The problem lay in the very poor quality of the "feeder roads" of Northern Alberta and British Columbia that restricted access to the main highway. It was argued that if the provincial roads could be improved, the commercial use of the Alaska Highway would increase whether or not it was paved.[2]

Periodically, the United States offered to share in the costs of paving. In July 1958, President Eisenhower and Prime Minister Diefenbaker discussed the possibility of some sort of joint arrangement but no decision was reached. A bill was introduced in the United States Senate the following year which called for the United States to share costs of paving with Canada and to open negotiations to make the necessary arrangement.[3] The extent of American economic involvement in Canadian development had already been criticized by numerous responsible Canadians. It would appear that any decision to permit the United States to pay for the Alaska Highway would have been (and probably still is) most impolitic. In any case, the matter never came to the point of formal negotiation.

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[1] Edmonton Bulletin, 23 August 1948.

[2] Ibid. [3] Windsor Star, 24 February 1959.

In August, 1959, the Minister of National Defence stated in an interview that "Canada has received no firm proposal from the United States on sharing the costs of paving the Canadian section".[1]

Over the years the NWHS came to take on a distinct raison d'être of its own. It would appear that less and less attention was paid to the original reason for army involvement with the Highway. The Royal Canadian Engineers increasingly saw the job of maintaining the Highway in simple terms of a job that they had been given to do and which they took pride in doing well. One of the claims of HME was that the Alaska Highway was the finest road of its type in the world. The frequent articles that appeared in the Canadian Army Journal by engineer officers on the subject of the NWHS reflected the job satisfaction that came with involvement with the route. In addition, Whitehorse, where the vast majority of military personnel of the NWHS were stationed, was an extremely popular posting for married soldiers and their families. With year round road, rail, and air communications, Whitehorse did not suffer from the isolation and monotony that characterize most other northern communities. The organized recreational opportunities, schools, hospitals, and shopping facilities of the community were good by national standards, and the higher cost of living was offset by a special northern allowance. For those families that enjoyed hunting, fishing, camping, and hiking, the Yukon truly was the "sportsman's paradise" of the tourist brochures.

The Department of National Defence, on the other hand, was somewhat less enthused about the NWHS. The main reason for this attitude was the increasingly high cost of maintaining the road and all its elaborate supporting facilities. In 1946 it was thought that the military

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[1]Montreal Gazette, 19 August 1959.

presence would only be required for a few years, but year after year, the soldiers stayed. In 1954, the Minister, Brooke Claxton, announced in the House of Commons that the Department of National Defence and the Department of Public Works were discussing the advisability of the latter taking over the road. The Minister observed that the road was "more and more becoming essentially a civilian operation", and he admitted that it would be "more economical and practical for it to be taken over by the Department of Public Works".[1] In January the following year, when an opposition member inquired if any progress had been made on the transfer of the NWHS to some other department, the Prime Minister replied that "no such decision has been taken".[2]

If the Liberals were lukewarm to the continued involvement of the military with the Alaska Highway, the Progressive Conservatives were bitterly cold to the prospect. When the latter came to power in 1957, George Pearkes, the new Minister of National Defence, began to search for a means of shifting responsibility. He was not particularly successful. In 1959, he stated publicly that any other department could have it for the asking! He stated that DND was "anxious to be rid of the responsibility of maintaining the 1,200 mile Canadian section of the Alaska Highway". He reiterated the argument that the road, built as a defence measure during the Second World War, was not now significant from a defence standpoint. He went on to add that increased civilian use of the road had forced DND into spending large sums to maintain it.[3]

Getting the Department of Public Works (DPW) to take over the

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[1] Debates, 21 June 1954, p. 6421.

[2] Ibid, 14 January 1955, p. 330.

[3] Montreal Gazette, 19 August 1959.

road, however, proved to be a major obstacle. Mr. Pearkes eventually changed his views, for the following year, the Commander of the NWHS reported that the "Minister was kind enough to say that we would probably continue in the job as no other department could do it as well".[1] It was evident, however, that the Army's responsibility for the Alaska Highway would end sooner or later. To defence planners, the continued maintenance of the Alaska Highway in the interests of national development was seen as being a costly anomaly in DND programs. In October 1963, the Liberal government of Lester B. Pearson decided to withdraw the military from the Alaska Highway.

The Joint Canadian-United States Arctic Weather Station (JAWS) Program

Immediately following the end of the Second World War, the United States began to consider the possibility of establishing a chain of weather stations in the High Arctic. Congressional approval for such a project was obtained in February 1946 and the United States government immediately approached Denmark and Canada to obtain their concurrence. The Danes quickly agreed to the establishment of a meteorological site at Thule, Greenland. Canada had a long hard look at the program prior to agreeing to support it in early 1947. In the interval, the United States had set about establishing the Thule base and the USAAF, with Canadian approval, had undertaken aerial reconnaissances in the high reaches of the Canadian Arctic in search of likely sites, with RCAF aircraft participating in the search.[2]

In the three following years, ships of the United States Navy,

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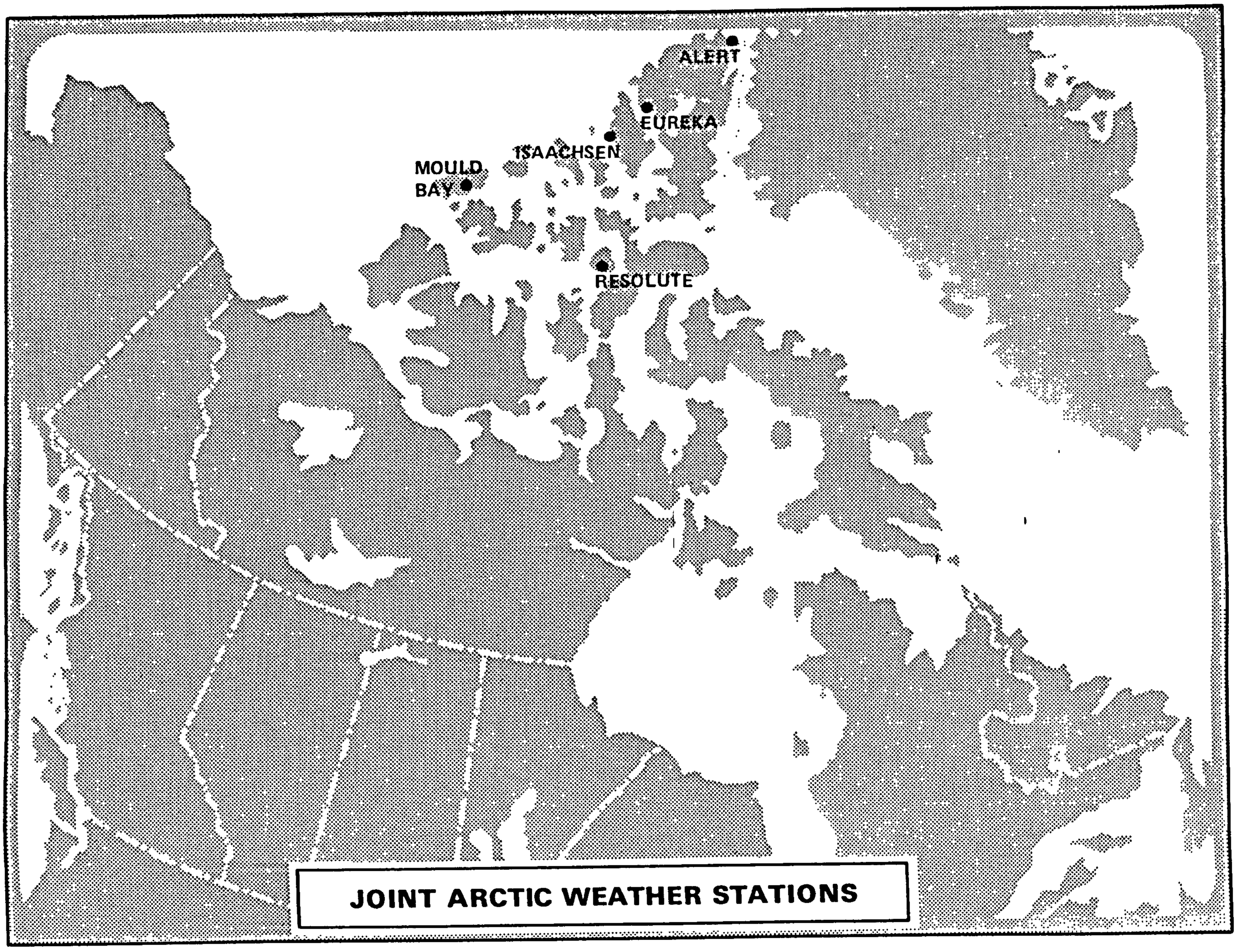
[1]Jones, "The Contribution of the Armed Forces to the Economy of the Yukon".

[2]D Hist, 75/50, Royal Canadian Air Force Operations in the Arctic Islands, undated monograph, 1948?.


ALERT
EUREKA
ISAACHSEN
MOULD
BAY
RESOLUTE
JOINT ARCTIC WEATHER STATIONS

United States Coast Guard, and aircraft of the United States Air Force established weather stations manned by Canadian and American civilian meteorologists at Resolute Bay on Cornwallis Island, Mould Bay on Prince Patrick, Isaachsen on Ellef Rignes, and Eureka on Ellesmere. The Royal Canadian Air Force began to participate in the program in 1950 when the last and most northerly station was established at Alert on the northern tip of Ellesmere Island. Operating out of the American base at Thule, USAAF and RCAF aircraft flew in all the necessary materials to put the Alert station in operation by early summer. In the early years of the JAWS stations operation, the military establishments of both countries shared the resupply duties, with the United States bearing the lion's share of the burden. Summer sea supply (for those stations that could be reached by ship) was the responsibility of a United States Navy task group, supported by RCAF ice reconnaissance aircraft. Aerial annual resupply was shared by both air forces, as were regular flights for mail delivery, emergency medical evacuation, and delivery of perishable items.[1] The RCAF established a small unit at Resolute Bay in 1949 to control air operations in the High Arctic, the airstrip there having been built in 1947 by personnel of the JAWS station and later improved on by United States Army Engineers.[2]

The JAWS sites were not built exclusively for meteorological studies. They were also designed and sited to provide a base for magnetic and geophysical studies and other scientific research projects. The

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[1]Meteorological Division--Department of Transport--Canada; U.S. Weather Bureau--Department of Commerce--United States, Joint Canadian-United States Arctic Weather Station Programme: A Review of the Establishment and Operation of the Joint Arctic Weather Stations . . . 1946-1951 (n.d. 1951?).

[2]R. W. Rae, "Arctic Experiences of Life Begins at Forty Below" Journal of the Royal Meteorological Society, Canadian Branch, Vol. 1, No. 2, February 1950, p. 1.

station airstrips and the associated equipment also provided more air navigational aids and emergency landing fields in support of flying in the Far North. During the first five years of the JAWS operation, the Royal Canadian Air Force frequently provided transportation for visiting scientists using the JAWS sites as base camps. From 1949 to 1951 the National Museum of Canada worked out of Resolute, Mould Bay, and Alert doing archeological studies and zoological collection. The RCAF ferried the researchers to and from the sites for the entire program. Similar support was provided to the Department of Agriculture for its "Northern Insect Survey" of 1949 and 1951, a task shared with the USAF. The USAF alone provided transportation for a geographical study at Eureka in 1951.

This general pattern of the RCAF providing transportation to remote northern centers for researchers from other departments of government and even universities continued throughout the 1950s. By the 1960s however, commercial aviation companies operating on a scheduled and charter basis had established themselves in the High North. It has always been politically unacceptable in Canada to permit the Department of National Defence to engage in national development work when civil departments or private enterprises were in a position to fill the need. The RCAF withdrew from the private transportation business in the Arctic. By the 1970s, ice reconnaissance flights, mapping operations, regular service to the DEW Line sites and the by then "Canadianized" Arctic weather stations were all in the hands of commercial aviation companies.

Mapping the North

In 1919, a Canadian government committee reported that to map the whole country would cost 180 thousand million dollars and take 3,600 years. The actual job was completed in the year of Canada's centennial

at considerably less cost.[1] Aviation applied to mapping made the difference. A program to provide aeronautical charts on a scale of eight miles to the inch, and sixteen miles to the inch (1:1,000,000) was initiated in 1944 and continued into the 1950s. This project was further modified in 1947 when the Cabinet Defence Committee assigned the Department of National Defence and the Department of Mines and Resources the project of mapping all of Canada on a four mile to the inch (1:250,000) scale. Again war inspired technology was to play an important part in the peacetime development of the Canadian North. In addition to long range aircraft, wartime needs had nurtured the development of wide angle aerial photography, stereo modelling, and Shoran, a navigational aid for bombing that turned out to be an ideal means of fixing control points for mapping. The mapping of all of Canada and particularly the North became a major peacetime project for the Army and Air Force. The RCAF took about 75 per cent of all the aerial photographs required and provided air support to the Army Survey Establishment which surveyed the entire Western Arctic, in the process of turning out one third of the required maps.[2]

The two traditional northern constraints, distance and climate played their usual part in creating difficulties for the map makers. Only Whitehorse, Norman Wells, Yellowknife, Churchill and Frobisher Bay had landing strips that could accommodate the four-engined Lancaster aircraft of 408 (P) Squadron. Fuel for aircraft operating at the rate the squadron did during operations could only be prepositioned economically if it were brought in by surface delivery. This necessitated planning months or years in advance. An emergency situation such as the search for a lost

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[1] R. C. McNeill, "Putting Canada on the Map"; Sentinel, Vol. 6, No. 3, March 1970, p. 16.

[2] B. W. Waugh, "Arctic Mapping", in Ibid, p. 44.

commercial pilot out of Whitehorse in 1951 used up 75,000 gallons of gasoline and disrupted the year's program.[1]

Photo mapping operations could only be started when the snow cover had receded enough to permit the aircrews to identify geographical features. It was discovered that late May and June were the best times for operation--the period between the departure of the snow and the departure of the ice. With open water came clouds--cumulus over the mainland and stratus amongst the islands of the archipelago. The northern weather stations proved to be an invaluable aid in locating areas that were free of cloud, but it was not uncommon for an aircraft to range as far as seven hundred miles from its base to find an area suitable for photographic work. Once the aircraft arrived in the area, however, it was faced with the usual problem of locating itself exactly, a task made doubly difficult by the myriads of lakes and rivers in the North, the lack of distinct land marks and inaccuracies in the preliminary survey charts. Year after year the mapping process continued. In addition to air photographs, it was necessary to install, maintain and extract work parties at each of the many Shoran sites that were required for control purposes. The usual procedure was for an amphibious aircraft to fly the party into the nearest suitable body of water from whence they would man-pack their equipment onto the selected height of land where "they remained like bearded eagles for the summer".[2]

By the end of 1967 the task was completed. The entire project included a total of 925 map sheets. About one third of the country was also covered in the 1:50,000 scale, the standard scale of military

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[1]R. I. Thomas, "Arctic Air Photography: RCAF Photo Equipment and Techniques", The Canadian Surveyor, Vol. 11, No. 4, April 1953, p. 19.

[2]McNeill, p. 19.

tactical maps. At this point the responsibility to meet national map requirements was removed from the Department of National Defence and given exclusively to the Department of Energy, Mines and Resources. Civilian aviation companies on contract now provide aerial photograph for mapping purposes. The Canadian Armed Forces retained a Mapping and Charting Establishment, but their responsibilities were limited to providing maps for specific military requirements.

The mapping of the North carried out by the Royal Canadian Air Force and the Royal Canadian Engineers between 1947 and 1967 provides a classic example of the military establishment in peacetime undertaking projects of national development that required skills relative to military operations. When the state of the art developed to the point where a civil branch of government could take over, and when future operations could be carried on as profitable, but still reasonably economic ventures, the military gave up the role and moved on to other fields. It is almost axiomatic that if a nation wishes to claim a land, protect it, develop it, and conserve it, just where those lands are and what they consist of must be known. One of the first steps in such a process is accurate mapping. The Canadian military establishment left their southern bases annually, came into the North, did the job and departed. That it took the better part of a century to even get around the task and twenty years to finish it emphasizes only further the vastness and remoteness of the Canadian North. There are undoubtedly still thousands of lakes, hills, and streams that show on the maps of the North that have never been physically visited by a human being. We only know that they are there because a few years ago, an RCAF aircraft flew over them and took a photograph which later became the basis of a map.

Military Aviation in the North

For the air force, the post-war North did not represent a potential aerial battleground. The Canadian decision not to develop nuclear weapons immediately eliminated the RCAF from the arena of strategic bombing. Those aviation writers who, in the mid 1940s, envisioned chains of interceptor bases strung across the high latitudes proved to be very wide of the mark as to what was necessary or what was even feasible. At the height of the Cold War and the threat of the manned bomber, the North provided useful tactical depth for the purposes of early warning and delineation of lines of attack. Since there were no strategic targets in the North that required point or area defence as provided by fighter aircraft, Canada was content to deploy her air defence forces south of the 55th Parallel of Latitude. (The United States, on the other hand, stationed substantial interceptor units in Alaska and at Thule, Greenland).

The Royal Canadian Air Force's "polar passion" manifested itself in a wide range of air support operations. In doing so, the RCAF, and later the various air elements of the unified Canadian Forces, played an important role in northern development. Flying activities were undertaken in support of other elements of the armed forces, for defence research projects and for other branches of government. Upon occasion, non-governmental activities were supported with military air resources when it was not possible to obtain commercial services. Of the three services, the air force during the post-war period developed the closest ties with the counterpart American service. Numerous missions were undertaken in support of USAF projects, or were attempted on a joint basis. In recent years, for nationalistic reasons, Canada has been more inclined to avoid these co-operative ventures than in the immediate post-war years. The main pattern that characterizes the extensive air force

involvement in the North is that aircraft operate in northern regions for periods up to several months, but these detachments have all been temporary. Support personnel and equipment on the other hand, were stationed permanently in the North to facilitate ongoing operations.

In 1946 the specific future requirements for RCAF activity in the Arctic were unclear. As a result, the air force undertook a program to learn as much about the area as possible. Canada was not the only nation showing an intense interest in polar regions and the potentials of trans-polar aviation. In addition to using RCAF aircraft, Canadian Air Force officers flew as crew members and observers on several British and American exploratory flights. The general theme of most of the military aviation in the Arctic during this year was the establishment of the basis for future operations, whatever that might encompass.

The USAF was particularly concerned with the problems associated with aerial navigation in high latitudes and, with Canadian co-operation, conducted a series of long range flights throughout the Arctic in late winter and spring. Three B-29 bombers were modified for long range operations: all armaments were removed and auxiliary fuel tanks were fitted into the bomb bays. The majority of the flights were connected with experimental work relating to long range aid to navigation (LORAN) which had been installed in Canada to support Exercise Musk-Ox. Flying out of Edmonton and Fairbanks, the aircraft, some with RCAF crew members, made dozens of sorties over the Arctic Archipelago, and ventured as far north as the pole itself. In addition to the data gathered in support of the LORAN program, "the navigators of the detachment began accumulating data that would assist future flying operations".[1]

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[1]K. R. Greenaway and S. E. Colthorpe, An Aerial Reconnaissance of Arctic North America. (Ottawa: King's Printer, 1948), p. XI.

It would appear that An Aerial Reconnaissance of Arctic North America, the aviators' handbook which was eventually produced from the detachment's efforts, was a self-generated project. The aircrews had quickly realized that the problems of polar flying were much greater than had originally been anticipated. Inaccurate mapping, unreliable magnetic compasses, and fragmentary weather forecasts all combined to produce a navigator's nightmare in a hostile land. The Arctic Pilot, produced by the Admiralty, had been drawn up to aid surface navigators in the North; Greenaway and Colthorpe set out to produce the aviator's equivalent. These American and British air expeditions are interesting because they showed the feasibility of long range aviation around the pole.[1] It must be remembered, however, that both types of aircraft were extensively modified, having ranges in excess of 5,000 miles and the ability to stay aloft more than twenty hours.

Trans-polar operations were one thing; flights within the Arctic Archipelago were another. In 1946, the RCAF undertook an adventurous flight program within the Western Arctic. Operation Investigator sent a Canso Amphibian and two single-engined Norsemen on floats, and a total crew of eleven men into the Arctic to locate, examine, and report on suitable air bases for float and ski based aircraft. Investigator marks the first occasion that the RCAF made a conscious effort to obtain some flying experience and an understanding of flying conditions in the area of Banks and Victoria Islands and the Boothia Peninsula. During the high summer months of July and August the three aircraft ranged far and wide over the western Arctic. They saw herds of caribou that they estimated to number in the millions, overflew and marvelled at pingos in the

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[1] R. H. Winfield, "The Royal Air Force North Polar Research Flights, 1945", Polar Record, Vol. 5, No. 33/34, 1947, p. 12.

Mackenzie Delta, met Eskimos who had travelled with Stefansson, located mysterious and abandoned settlements and boats.[1] Reading their report, one gets the impression that they had a marvelous time.

In 1947, the RCAF began a program in co-operation with the Department of Mines and Resources to carry out a magnetic survey of the North in an attempt to locate precisely the magnetic pole.[2] The operation was a definite success. Both the pilot and the navigator of the Canso flying boat were decorated for the skills they displayed in flying about the pole. The program continued with RCAF support in subsequent years.

Aerial navigation in the Arctic was a precarious activity at the best of times. The hostile environment coupled with direction keeping problems associated with the proximity of the magnetic pole and the paucity of support facilities made northern flying a demanding profession. The scarcity of navigational aids was another negative factor. Thus, Operation Beetle, a joint Canadian-American plan to install a Loran (Lo Range Aid to Navigation) low frequency beacon system in the Arctic was received with enthusiasm by the RCAF when it appeared in 1946.

Operation Beetle[3] is of interest to this study for several reasons. In many ways it was typical of the joint Canadian-American projects being undertaken by the military in the North at the time. Secondly, it

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[1] D Hist, 75/35, A. H. Warren, "Operation Investigator".

[2] RCAF, Directorate of Public Relations, Release No. 7218, (held in DInfo Morgue).

[3] Documents on Operation Beetle are fragmentary. In the main they consist of a jigsaw puzzle-like collection of messages, operation orders, administrative instructions and memoranda, collected in two file folders held in D Hist, North West Air Command - Operation "Beetle", 181-009 (D6561 and D6556). A minor supplementary source exists in the form of the Operations Record Book of the three stations: 214 RCAF (LF) Loran (Monitoring) Unit Sawmill Bay, NWT, 5 RCAF (LF) Loran (Slave) Unit, Cambridge Bay, NWT and 4 RCAF (LF) Loran (Master) Unit, Kittigazuit, NWT. All subsequent references to Operation Beetle are from one or more of the above mentioned sources.

underlined the complexity of northern operations. Despite the experience of the Northwest and Northeast staging routes, the problems encountered, particularly in the construction phase, underlined that lessons of the past were not widely known, and that the full magnitude of the northern problem was not well understood. Thirdly, there were many delays in the construction phase attributable not only to lack of basic data about the area of operations, but also to the absence of detailed planning and co-ordination between all agencies involved. A fourth aspect deserves some attention. The available RCAF documents do not reveal any consideration being made of the utility of the system for the purpose of domestic civilian flying. On the other hand, the potential to civilian aviation having the proper equipment to utilize the facility is obvious. In a wider sense, the role that the stations come to play in the northern infrastructure was significant.

The project required a total of four stations--one on the Alaskan coast and three in Canada. The first problem was to select the sites for the installation for the technical requirements of the Loran equipment had to be weighed against terrain and accessibility. The reconnaissance flight took over two weeks, held up by the seemingly inevitable weather delays and aircraft unserviceability. Eventually, Cambridge Bay on the south coast of Victoria Island was selected as the site of the master unit. A secondary, or slave unit, was to be built at Kittigazuit in the Mackenzie Delta. No suitable site on arctic coast could be found for the monitoring station which would keep the signals from the other stations in phase, so the reconnaissance party selected Sawmill Bay on the southeast corner of Great Beer Lake for the third site.

The construction of the stations in the Mackenzie presented no particular problem since the sites were on relatively well established

northern inland water routes. Cambridge Bay, however, was well beyond the northern frontier and the tremendous problems that were encountered in its construction, despite the military's surprise at the difficulty, were typical. The first step was to transport the 1,500 tons of equipment to the site. All of the stores had to be moved by air for it was discovered that no commercial carrier was willing, or able, to undertake a sea transport contract during the brief summer shipping season.

Cambridge Bay, however, had no airfield. Before the construction could begin; before movement of material could begin, a light ski-equipped aircraft had to fly in and a ground party had to mark out suitable ice landing strip for a C47 Dakota to land. The Dakota flew in a small bulldozer to improve the ice strip to make it capable of accepting the heavy C54 aircraft of the USAAF assigned to move the equipment. Storms and a breakdown of the bulldozer lengthened this relatively minor task, which took most of April to complete.

The assembly of material had to be completed before break-up in mid-June rendered the airstrip unusable. The isolation of the site and the inexperience of the construction crew in working in the arctic environment combined to stretch out the construction phase to almost the last minute. Several cases of snow blindness occurred. The troops did not know how to live comfortably in tents, so the main air flow had to be halted while pre-fabricated barracks were flown in. When the RCAF flew in two heavier bulldozer to assist in airfield maintenance, the equipment remained idle until a specialist able to assemble it was located in southern Canada and flown into the Arctic to do the job. It was not until October 1946 that the Beetle Loran system became operational.

The command and control arrangements in this international military venture are of interest. The functional and administrative commander of

the system was the Canadian Air Officer Commanding, North West Air Command with headquarters at Edmonton, Alberta. On the sites, the situation was somewhat more complex. Command of the station was vested in an RCAF officer, but the technical control was held by the Senior United States Technical Officer. United States military and civilian personnel at the units were required to "conform to rules, regulations and instructions as issued by the commanding officer, but came under their appropriate service or civilian authority for purposes of discipline".

Such a dual system could not have worked had there not been a real spirit of co-operation between Canadian and American forces. What difficulties there were tended to be minor and easily smoothed over. Canadian commanders complained that the USAF specialist tradesmen were initially extremely reluctant to undertake routine housekeeping chores about the station. In the absence of general duties personnel to fuel stoves, chop ice, and carry out garbage, it was inevitable that all personnel would have to participate. It was reported that the USAF tradesmen quickly saw the logic of the housekeeping needs.

The on-site situation catered to Canadian sensibilities on the issue of sovereignty. In this joint undertaking, bases located in Canada were to be commanded by Canadians. The Canadian command element was more symbolic than a military necessity. During the two years that the system was jointly operated, Canadian station commanders often complained of a tendency on the part of visiting American senior officers to ignore the Canadian station commander and to go directly to the American technical chief. This phenomenon may be partially attributable to the fact that visiting officers were usually on a technical inspection and hence their interest would primarily lie with the Loran operation itself. On the other hand, the blithe assumption by individual American servicemen in

the late 1940s and 1950s that the Canadian Arctic was really the American Arctic was a common occurrence in the North.

The Beetle system was not destined to have a long life. Canada, as planned, took over full operation of the system in October 1948. Two months later the usefulness of the entire network was seriously questioned. An extensive test program that continued until the spring of 1949 revealed that due to errors in the siting of stations and the low power of the equipment, "the operational usefulness of Beetle was deemed as nil". Most of the staff and technical equipment was removed immediately. A few people were left at each station as "housekeepers" awaiting a final decision on the future of the stations. On February 1950, the decision was made to close out all the stations completely. Kittigazuit and Saw Mill Bay were abandoned outright, the local RCMP agreeing to drop in occasionally to check on the security of the remaining buildings and stores. The Cambridge Bay facility was turned over to the Department of Transport for use as a weather station.

It remains to examine the role played by these stations during the brief three years of operations. Although nothing was made of it at the time, an examination of unit historical reports and war diaries reveals that the station did much more than simply send out or monitor a Loran signal. The facilities available at the station were used by other elements of the armed forces for staging purposes, by other departments of the federal government, by private companies and individuals and to a certain degree, by local natives. The very fact of the existence of a support facility often made other unrelated development-oriented activities possible. The Cambridge Bay site was co-located with an RCMP detachment and a Hudson's Bay Company store served the needs of the semi nomadic natives of the Queen Maud Gulf. While Kittigazuit was isolated,

it was only a relatively short distance from the Beaufort Sea Eskimo community of Tuktoyaktuk. Sawmill Bay existed in solitary splendor.

Native Training Programs

The subject of northern education is vast, complex and contentious. By the late 1950s, the government had replaced the church as the agency with prime responsibility for northern education, and the Education Division of the Department of Indian Affairs and Northern Development (DIAND) developed a comprehensive program of elementary, secondary and vocational training. In some instances, however, there was a requirement for special training that was not available through the regular school system. In many such cases, DIAND turned to the Department of National Defence for assistance.

When a government program of building community airstrips and roads was begun in the Eastern Arctic, the Royal Canadian School of Military Engineering was contracted to run a special heavy equipment operators course for thirty Eskimos who later returned to their own communities for wage employment. When diesel electric generators began to be installed in northern communities, DIAND reasoned that the operation, servicing, and maintenance of these plants could well be turned over to local residents, rather than having to import a technician from the South. Accordingly, the Royal Canadian Electrical and Mechanical Engineer School undertook to provide the necessary training. Over a period of three years, ninety Eskimos attended the special four-month long courses the Army ran. The growing bureaucracy of the North created a demand for qualified clerical workers. The Army again responded and ran a three month course at the Royal Canadian Army Service Corps School for ten Eskimo men. All candidates, it was reported, found employment in offices when they returned to the North.

The Army was not the only service involved with training native northerners in modern skills. The Royal Canadian Navy ran a series of special courses on both coasts in response to DIAND requests. A half dozen Eskimos were trained as marine engineers at HMC Dockyard at Halifax in preparation for employment on ships of the Canadian Coastguard. On the west coast, fourteen Eskimos in the process of purchasing modern fishing boats were given training in the maintenance and repair of their vessels. A further two dozen received a course in boat building and repair from the RCN prior to establishing their own boat building business at Inuvik.[1]

There are indications that running these courses were not particularly simple tasks for the military. The standard military course had to be modified to meet the specific needs and background of the Eskimo candidates. Demonstrations of techniques had to be letter perfect or else, it was discovered, the students tended to copy errors of procedure. Instructors at the Electrical and Mechanical Engineering School teaching generator maintenance were somewhat dismayed when they discovered the Eskimo cultural characteristic of youth yielding to the authority of age. On the first course that the School ran, it was discovered that only a few of the candidates had what the military would term the acceptable minimum technical background for the course they were to follow. Two of the students were illiterate and most of the others had only previously worked as manual labourers.[2] Still, the military and their students persisted and the DND training program, on the whole, was a success. DIAND only used the military facilities for a relatively short

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[1]Eleanor A. Ellis, "Education of the Eskimo for Wage Employment", Canadian Geographical Journal, Vol. 73, No. 5, November 1966, pp. 152-153.

[2]R. H. Lee, "Army Trains Eskimos", Canadian Army Journal, Vol. 14, No. 4, Fall 1960, pp. 218-132.

period. By the late 1960s trades training schools had been fully developed in and for the North and there was no longer any need to call on the military. The Eskimo training program represents another example of the military contributing to the national development of the region beyond the frontier. In the early days the military did the work. When adequate civil facilities were developed at a later date, the Department of National Defence withdrew from the project.

Northern "Garrison Towns"

The general withdrawal of the military from the North in the early 1960s had an inevitable impact upon those communities where sizable military bases had been established to support various northern programs. The two main "garrison towns" of the North--Whitehorse and Churchill--were the hardest hit in the withdrawal process although a host of smaller RCAF stations ceased operation in the same time frame. Frobisher Bay was operated by the RCAF between 1950 and 1956 when it was turned over to the Department of Transport. During the 1959-1963 period of Strategic Air Command operations there was a small RCAF detachment at the settlement, but this too closed when the Americans left. Resolute Bay was manned by an RCAF detachment starting in 1951, providing flying support for RCAF for northern operations. It too was turned over to DOT in 1964. Churchill was probably the hardest hit by the military re-posturing of the 1960s. In 1946, a Combined Experimental and Training Station had been established by the Department of National Defence near the site of the World War II Crimson airbase. All three Canadian services, the Defence Research Board, and the United States Army eventually established detachments at Churchill to support arctic training, equipment trials, and research. The military population in the area further increased during the 1961-63 period when the Strategic Air Command tankers operated from the base. Fort Churchill

as the military base was designated to distinguish it from the townsite some four miles distant, had been selected as Canada's main northern base in 1946 for a number of reasons. The most important of these recognized the vital necessity of accessibility in the North. Churchill offered year round rail access, an airstrip, and a deep water port during the summer shipping season. In addition, from a military training point of view, it offered both bushland and barren ground terrain in which to train.

The Canadian Army ran the base and provided support for the other military branches located there. Operationally, Churchill was the northern center of army sponsored environmental studies, operational research development, and combat and survival training. The RCAF ran the airfield facility with the exception of the meteorological facilities and the radio range which were handled by DOT. Air force northern experimental projects and operational training were carried out from the base which also had an air search and rescue role. The Royal Canadian Navy's activities were limited to a radio facility which did communications research.[1] The Defence Research Board (DRB) ran a Northern Laboratory within the base complex and undertook numerous small projects, all contributing to the major role of the laboratory: "To solve . . . problems which are encountered by the forces whilst fighting and surviving in the north". DRB was concerned with the effects of the arctic environment on the performance of personnel and materials in the field.[2] The small United States Army detachment carried out engineering tests of all types of material and equipment under arctic conditions. The section functioned as a lodger

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[1]DND (Army) Department of Public Relations, "Fort Churchill Round Up", February 1956. (Held in DInfo morgue).

[2]A. M. Pennie, "Defence Research Northern Laboratory", Canadian Army Journal, Vol. 10, No. 1, January 1956, pp. 47-48.

unit at Fort Churchill and drew support services from the Canadian Army on a cost recoverable basis.

This wide range of activities led to the build up of a garrison at Fort Churchill of over 600 military personnel, many of whom were married and had their families with them. Over one hundred Americans of the SAC squadron added their numbers to the group during 1959-1963. The total population of the military base was approximately 3,000, including dependants and 450 civilian employees. It was reported that the base was a close knit community and was virtually self contained, having its own churches, schools, social groups, athletic facilities, banks, and all the commercial shops one might expect to find in a community of that size.[1] No studies have been undertaken to determine the economic, cultural, and social impact of the Fort Churchill facility upon the civilian community. It would appear that to a large extent, contacts between the two communities were limited, although there undoubtedly would have been a certain economic multiplier effect falling to the townsite from the military's presence.

In 1964, the Canadian Army and the Royal Canadian Air Force ceased to operate the Fort Churchill facility. Housekeeping responsibilities for the base itself were transferred to the Department of Public Works, while the Department of Transport took over the entire airfield works. This change of responsibilities did not go unnoticed in the House of Commons. In October of the previous year when rumours began to circulate that the base might be closed, Robert Simpson, the MP for Churchill, had asked the Minister for information, his primary concern being for the jobs of the civilian employees.[2] In December, the Minister officially announced

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[1] Regina Leader Post, 11 February 1957.

[2] Debates, 14 October 1963, p. 3526.

the closing, a decision that drew sharp criticism from the Conservative opposition. Simpson continued to focus on the importance of the garrison to the total life of the community, stating that Manitoba had been shocked by the decision and asked for a reconsideration on the grounds that sufficient allowance had not been made for the economic, cultural, social, and medical impact of the closing on the local community. Douglas Harkness, a former defence minister, dealt more with the purely military aspects of the change, claiming that the move might well herald the end of cold weather training and research. Lucien Cardin, the Associate Minister, countered by saying that only the administrative garrison was being withdrawn and that both the army and the air force would continue to use Churchill as an advanced staging base for operations and exercises in defence of the Eastern Arctic, drawing the necessary support from the departments that were taking over the base.[1]

At almost the same time as it was announced that the Churchill base would be closed, the decision was finally made to transfer responsibility for the Alaska Highway to the Department of Public Works. Eric Nielson, the Member for Yukon, reacted in much the same manner as his Churchill colleague. He expressed concern over the effect of the withdrawal on the civilian employees. On the whole, however, there was little Conservative opposition to the move; indeed they had considered it themselves when they were in office. Harkness heralded the army's withdrawal as being "long overdue". Nielson, while not arguing against the logic of the transfer of responsibilities, expressed regret at the impending loss of the military community because of its traditional social, economic, and personal contribution to the Yukon.[2] Not everybody was sorry to see

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[1] Ibid, pp. 5456, 5483, 5526, 5577, 5578.

[2] Ibid, 5-6 December 1963, pp. 5483, 5551.

the army go. To many northwestern businessmen, the paving of the highway had been a long-standing development objective. It was generally accepted that as long as the Department of National Defence continued to run the system, that this would not be done. The mayor of Dawson Creek claimed that the transfer was "an important step towards paving the route".[1]

The withdrawal of several hundred troops and their families from Whitehorse did not have the same effect on the community as did the departure of a similar sized group from Churchill. The maintenance of the Alaska Highway was an ongoing commitment of the Canadian government, no matter which department actually administered the facility. The civilian maintenance workers' jobs remained secure, and many new administrative appointments, formerly held by soldiers, were thrown open to civilians. In addition to the phased withdrawal of the garrison, the economic boom of mineral development that the Yukon was enjoying in the mid 1960s did much to soften the economic blow to Whitehorse.

After 1964, with the exception of the small detachments at each of the four DEW Line main sites, the only continuing military presence in the North was in the form of five supplementary radio stations at Churchill, Whitehorse, Frobisher, Inuvik and Alert. These stations had been established in the 1950s for the stated purpose of carrying out communications research in the North.[2] During 1967-68 it was decided to close out the first three of these stations. Unlike the transfer of

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[1] Edmonton Journal, 26 October 1963. The transfer of responsibility for the road, in the final analysis, had little impact on the basic economic factors relating to highway paving. In 1980, the route is still unpaved.

[2] The Department of National Defence has never released any details on the exact nature of the work alone by the Supplementary Radio System beyond stating that some of the equipment used is "classified". I have arbitrarily excluded the Supplementary Radio System in the North from this study.

responsibility for the NWHS or the NWT and YRS to another branch of government, the closing of these stations marked the end of a program and the absolute loss of population to the communities affected.

The closing out of the Churchill radio station saw a hundred servicemen and their families, a total of 250 people, leave for the South. In the process Churchill lost its only dentist in the person of the base dental officer.[1] In 1967-68, the RCAF followed the army in its exodus from Whitehorse. The Whitehorse airfield had been run by the Department of Transport since 1964; those RCAF members who had remained in Whitehorse had been employed at a communications research facility similar to the RCN's establishment at Churchill. The station accounted for a total of about a thousand people. There were 225 service personnel who, with their families numbered about 800. In addition the station had permanently employed approximately seventy civilians, most of whom were married. To the community of Whitehorse, the closing of the station was a serious blow. The Yukon Research and Development Institute commented that:

> the air force departure will be felt in sports activities, social events, and will limit the number of woman workers and part time help available here.[2]

This statement underlines effectively the impact of the loss of a major industry in any small town. The pure financial loss of jobs and local purchases represents only the tip of the iceberg. The economic multiplier effect of a reduced population, the loss of military dependants from the work force, the weakening of local cultural, social and recreational organizations all combined to create a severe stress on the

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[1] Winnipeg Free Press, 13 September 1966.

[2] Whitehorse Star, 29 August 1966.

community. In the isolation of the North, this effect may be even more acute than it is in the more developed regions of the country. Certainly the subject merits further study.

CHAPTER IX

RESURGENCE

The Military in the Contemporary North

The surge of enthusiasm and interest that characterized military involvement in the Canadian North after the end of the Second World War did not last. Starting in the late 1950s and extending well into the mid 1960s, developing technology and changing national priorities combined to reduce military activity in the region. The process of withdrawal began under the Conservative administration of John Diefenbaker, the leader with the "Northern Vision":

> A Canada of the North. This is the Vision. Canadians realize your opportunities! This is the message I give you, my fellow Canadians. Not one of defeatism. Jobs. Jobs for hundreds of thousands of Canadians. A new Vision! A new hope! A new soul for Canada![1]

Diefenbaker's vision remained just that. The few "roads to resources" that were started were either never finished or took decades to complete. The North did not come alive with domed cities, nuclear power generators, and hundreds of thousands of Canadians working in resource industries. In his vision of a developed North, Diefenbaker saw no place for the military, either as a protector or as a builder. Defence policy during the 1956-1963 time frame that has come to be known in Canada as the Diefenbaker Years, was dominated by the three "Ns" of NORAD, NATO and nuclear weapons.

Lester Pearson's Liberal administration during the following five

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[1]Cited in Gerald Clark, Canada The Uneasy Neighbour (Toronto: U of T Press, 1965), p. 337.

years completed the process of withdrawal. The 1964 White Paper on Defence that charted Canadian defence policy for the Pearson years emphasized internal change within the military establishment. This lead first to integration and later to unification of the armed forces, absorbing much of the time and energy of Canada's military leaders.

By 1965, military activity and presence in the North had sunk to a post-war low. No naval ships plied the northern waters. The air force had given up its periodic reconnaissance and surveillance flights over the Arctic Archipelago and Basin the previous year. No northern exercises were undertaken by land combat units. No long, or even short term, national development projects occupied military signallers or engineers. The aerial tanker squadrons of the United States Strategic Air Command were gone. The only military personnel to be found in the North were the handful of airmen at the four DEW Line main sites keeping the long polar watch, and the communications research specialists manning the supplementary radio stations at Inuvik and Alert. The occasional RCAF cargo aircraft made a resupply trip to the Arctic Weather Stations or the radio sites. Beyond that, the military was gone, and so it remained for four years.

The withdrawal of the military from the North was largely unremarked by the Canadian public. What comment there was tended to focus on the national development role formerly filled by troops. In the House of Commons in 1964, an opposition member, Mr Haber Smith, argued against the government's decision to withdraw military forces from Whitehorse and Churchill. Since the services provided by the military would have to be taken over by some civil department of government, Smith felt that any saving in the defence budget would be chimerical.[1] Another opposition

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[1] Debates, 12 May 1965, p. 3171.

member, Mr Ormiston, argued to much the same effect three years later claiming that there was a lot to be gained in terms of defence capability by having the Department of National Defence run certain public facilities in the North.[1] In point of fact, total national interest in the North waned during this period. It was one thing to make brave statements about "last frontiers" and "Canada's northern destiny"; it was another actually to confront the associate hard economic realities. There was no major economic development to speak of; shipping remained local and limited.

The 1968 federal election returned the Liberals, now led by Pierre Eliot Trudeau, to power with a substantial majority. The Canada which Trudeau was to lead was a nation with a buoyant economy and an enthusiastic sense of nationalism flowing from the centennial celebrations of the previous year. Trudeau himself had a strong sense of national priorities and led a generally supportative country into new areas of concern and in new directions. Nowhere was this more true than in the Canadian North.

Unlike Lester Pearson, his predecessor, Trudeau was keenly interested in northern development. Canada's North: 1970-1980, produced by the Department of Indian Affairs and Northern Development (DIAND) was issued as the cornerstone of the government's integrated northern policy. The document posited four northern goals: the provision of a higher standard of living for northern residents, the maintenance and enhancement of the northern environment, the encouragement of economic development and the maintenance of Canadian sovereignty and security in the North.[2] By themselves, no thoughtful Canadian was likely to argue with these goals. They were generally well received, but Canadians as a whole

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[1] Ibid., 7 April 1967, p. 14677.

[2] Canada, DIAND, Canada' North: 1970-1980 (Ottawa: Queen's Printer, 1972), p. 10.

reserved final judgement until the government revealed specific programs to meet these goals. For the Department of National Defence, the last goal--maintenance of sovereignty and security--had strong overtones of possible military involvement. Even the first three goals could have been extended to encompass military effort were the government to decide to revive the dormant nation-building role of the Canadian Forces.

At the same time, as the government was developing its northern policy, a major review of defence policy was initiated. Although a White Paper on the subject was not issued until the summer of 1971, the Prime Minister had indicated as early as April 1969[1] that he intended major revisions in defence policy. The Prime Minister ranked Canadian defence priorities as the protection of sovereignty, the defence of North America, fulfilment of NATO commitments, and international peacekeeping roles. In a sense, this did not represent a major departure from the previous (1964) White Paper which had ordered defence priorities as the direct protection of Canada, NATO commitments, and peacekeeping. However, it was clear that it was Trudeau's intention to change the emphasis. During the Pearson years, NATO and UN peacekeeping had received the lion's share of Canadian defence attention and resource allocation despite their second and third places in the ranking of priorities. The direct protection of Canada consisted of forces assigned to NORAD. The threat of invasion, however small, distant, or short lived was assessed as being so low as to warrant being ignored.

The notion of protection of sovereignty as a military role is the key to the Trudeau thesis. The Prime Minister indicated that it was his intention to reduce substantially the Canadian contribution to western

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[1] P. E. Trudeau, "A Defence Policy for Canada", External Affairs May 1969.

European defence in NATO. What was not immediately apparent was whether or not there was a direct link between the need to protect sovereignty and the NATO force reduction. Equally unclear was the specific nature of the role to be played by the Canadian Forces in protecting sovereignty, and the extent to which the government was prepared to commit men and money to meet sovereign challenges. The underlying question, which was frequently raised in the House of Commons and in public discussion during 1968 and 1969, was just what specifically was Canada sovereign of in the North, who was challenging this sovereignty and in what ways.

In May 1969, the Prime Minister made a statement in the House of Commons on Canadian northern sovereignty. In the view of his administration, there was no question over Canada's territorial claims. He said:

> Canada's sovereignty over its Arctic regions, including the islands of the Arctic archipelago, is well established and . . . there is no dispute concerning this matter.

He went on to add that the nation was equally secure with respect to the resources of the northern continental shelf since

> The Geneva Convention on the Continental Shelf provides that the coastal state exercises over the continental shelf sovereign rights for the purposes of exploring it and exploiting its natural resources . . . . No country has asserted a competing claim to the resources in question . . . .

When he came to deal with the waters of the Arctic Archipelago, however, the Prime Minister was forced to admit that the Canadian claim to sovereign jurisdiction was not quite so well established. He cited the Conservative Minister of Northern Affairs who had said in 1963 that

> The area to the north of Canada, including the islands and the waters between the islands and areas beyond are looked upon as our own . . . .

Mr Trudeau noted, however, that

> Not all countries would accept the view that the waters between the islands of the archipelago are internal waters over which Canada has full sovereignty. The contrary view is indeed that Canada's

sovereignty extends only to the territorial sea around each island.[1]

By 1970 Canadian northern perspectives were terribly confused. The government's position was that there was no challenge to Canadian sovereignty over northern lands--either continental or archipelagic. Similarily, territorial waters and the arctic sea bed were seen as being firmly within Canada's sovereignty. Certainly no nation had challenged that position in at least two generations. The only possible area where Canada could be challenged was in the matter of the commercial and peaceful use of the Northwest Passage. At the same time, Canada's Armed Forces had been given the primary mission of protecting sovereignty with particular emphasis on the North. Yet, by the government's own admission, the only possible challenge to Canadian claims--and that in a very specific and restricted area--was mounted not by an international rival or threat, but by the United States, Canada's closest ally and major trading partner. Given this perplexing set of circumstances, it is little wonder that the Canadian public at large and the Canadian Forces in particular had some considerable difficulty in coming to grips with the role of the military in the "new north". Before examining the nature of the Canadian military response and its impact on the North, it is of use to note the extent of public confusion that attended the new military priority and the government's sudden concern for northern sovereignty.[2]

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[1] Debates, 15 May 1969, p. 8720.

[2] Much of the public concern, which bordered on near-hysteria in some cases, over northern sovereignty between 1969 and 1971 focussed on the two voyages of the American supertanker Manhattan into the Arctic to study the feasibility of transporting crude oil from the Alaskan North Slope in icebreaking tankers operating year round through the Northwest Passage. Canada supported both voyages by providing Coast Guard ice breakers as escorts for the Manhattan, but was clearly unhappy over the prospect of actual oil transporting activities being developed without a Canadian input of pollution controls and safety standards. The issue

As early as March 1969, John Diefenbaker had confused the debate by demanding of the Prime Minister a statement on the government's position on sovereignty in the Arctic. The reason for the former prime minister's concern was that he had received reports that some American maps showed the ownership of the arctic islands as being in question.[1] No American administration of this century has ever questioned Canadian ownership of the islands lying north of the continental land mass, yet here was a question hauntingly similar to the 1919-22 debate, raising the spectre of American designs on the lands of the Canadian North. Stanley Knowles of the New Democratic Party made reference in the House to reports that the Governor General was "to make a tour of the northern part of Canada to assert our sovereignty there".[2] The Prime Minister denied the assertion of sovereignty as one of the purposes of the trip, claiming that "our sovereignty in the northern part of Canada is very well established". Still, the damage had been caused. The popular press largely ignored or rejected the government's statement on northern sovereignty and continued

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centered around the status of the Northwest Passage. Canada claimed the passage to be internal waters. The American view was that the passage was an international strait. Agreement between the North American allies was never reached and to a large extent the matter remains in limbo. The imperative for resolution diminished considerably when Humble Oil abandoned the tanker project and decided, for a number of reasons, to build a trans-Alaskan pipeline to move the oil to market. Maxwell Cohen has produced probably the best short analysis on the impact of the "Manhatten Incident" on Canadian public opinion. He wrote: "Manhatten's two voyages made Canadians feel that they were on the edge of another American 'steal' of Canadian resources and 'rights' which had to be dealt with at once by firm governmental action. In a sense . . . the kind of 'panic' atmosphere in Canada in 1969 and 1970 on the Arctic question was unfortunate. To a large extent, it was part of the near paranoia that was infecting much of the Canadian view of its continental prospects in Canadian-American relations". See Maxwell Cohen, "The Arctic and the National Interest", International Journal: Canadian Institute of International Affairs, Vol. 26, No. 1, Winter 1970-71, p. 72.

[1] Debates, 7 March 1969, p. 6337.

[2] Ibid., 27 March 1969, p. 7190.

to harp on territorial sovereignty.

An article appearing in the Ottawa Citizen in January, 1970 read in part that "A defence team toured the Arctic and recommended that this year's training exercises be held in the high Arctic, for the first time on some of those Arctic islands involved in the sovereignty debate (emphasis added)".[1] In 1972 the issue was still being bandied about. Another article appearing in the Ottawa Citizen maintained that "If you are not able to occupy a vacant piece of land, it is difficult to claim it as your own". The article went on to develop the thesis that Canada did not have much of a claim to the Arctic because it had not been fully occupied, but that the issue had been academic until the late 1960s when the "Arctic suddenly bloomed as the "fount of riches". The writer interpreted the revision of defence priorities as a Canadian response to "doubts being expressed abroad concerning the extent of Canadian territory in the North".[2]

Again, it must be stated, public concern for a threat to Canadian territorial claims in the North was purely in the minds of these Canadians. No state with even the vaguest interest in northern affairs had raised the slightest question over Canadian territorial sovereignty--least of all the United States who was often painted as the chief villain in the scene. The government at no time claimed that it was the role of the military to establish sovereignty; rather the forces' role was to protect a sovereignty long since established. Government efforts to clarify the situation were either ineffectual or fell on deaf ears.

In many cases, the government contributed to the confusion. At a

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[1]John R. Walder, "Defence Department lacks guidance on Arctic policy", Ottawa Citizen, 12 January 1970.

[2]Ottawa Citizen, 27 June 1972.

press conference held in the North in 1971, Donald Macdonald, the Minister of National Defence, made the following statement:

> The defence of (northern) Canada had not been adequately dealt with in the past. The Manhattan incident pointed out to us the challenge involved in a foreign presence in our Arctic territories.

He continued

> We have to be here and we have to be seen to be here. And we may have to be more concerned with our allies in this regard than with Russia for instance.[1]

Fortunately for the Canadian government, this statement, which can only be described as incredible, elicited no significant comment in either the United States or Canada. The implication however subtle, is clear. The Minister of National Defence was threatening the use of military force against the commercial ventures of the United States. A cynic might well observe that Canada proposed the use of military forces to defend against her enemies and the same military forces to protect sovereignty from her friends.

The 1971 White Paper on Defence, Defence in the 70s, stated that

> Defence policy must, however, also take into account the possibility that other challenges to Canada's sovereignty and independence, mainly non-military in character, (emphasis added), may be more likely to arise during the 1970s.[2]

The crux of the matter lies in the appropriateness of a military response to a non-military challenge. Implicit in the logic of Defence in the 70s is the signalling of the intention to use military forces in an operational role below the threshold of violence while still retaining the option to use force in extreme situations.

Although the White Paper provided few details, it stated that the main task for the Forces in the protection of sovereignty would be

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[1]Cited in Edmonton Journal, 17 May 1971.

[2]Canada, Department of National Defence, Defence in the 70s: White Paper on Defence (Ottawa: Queen's Printer, 1971).

surveillance. It was admitted, however, that such surveillance would of necessity be extremely limited. Operations by existing Argus long range patrol aircraft, configured as they were for anti-submarine warfare, was limited by light and weather (and the absence of suitable northern bases). Surveillance by the ships of Maritime Command was limited to the few ice free months of the year (and then only in certain waters). Ground surveillance by soldiers was seen as simply impracticable because of the huge size of the area involved.

The implication here was of great significance to the Canadian Forces. While Canadian force levels in Europe were being halved, the withdrawn troops were not to be committed to the protection of sovereignty--the Forces were to be reduced. Similarly, the new role, it was implied, would have to be fulfilled with equipment and facilities then in the Forces' inventory.[1] No new "northern-sovereignty" equipment was to be obtained--no special reconnaissance aircraft or surveillance equipment for existing aircraft for the air force; no ice-capable or under-ice ships for the navy; no all terrain vehicles for the army.

In a summary of the sovereign threats to Canada's North, the Prime Minister said:

There is not now, nor is it conceivable that there ever will be from

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[1] Defence in the 70s stated that studies would be made on "the desirability of reconstituting the Canadian Rangers; . . . establishing a special training school for all personnel assigned to the North; . . . and the adequacy of existing equipment . . . with particular emphasis on over snow vehicles", p. 24. In all cases, the final decision was that nothing was required in any of these areas. By 1971, Northern Region Headquarters had developed a full plan for activation of an "Arctic Ranger" unit, but the plan never received approval, undoubtedly due to the costs associated with the requirement for a regular force cadre of command and support troops until such time as native northerners could take over these roles. No High Arctic Base was established, again, probably due to cost factors. No new vehicles were obtained and the Army's medium marginal terrain vehicle development project was cancelled in 1975.

> any source, challenges to Canadian Sovereignty on the mainland, in the islands, in the minerals lying in the continental shelf below the Arctic waters, or in our territorial seas.[1]

In the government's view, while protection of sovereignty was the first military priority, the threat to that sovereignty was minimal and, under existing conditions, did not warrant a major commitment of men, resources, and money. To protect sovereignty in the North, the government adopted a policy that is strikingly analagous to the situation that existed in Canada at the time of the 1922 Eastern Arctic Expedition. In the 1920s, Canada established sovereignty in the Arctic with a symbolic presence of the Royal Canadian Mounted Police. In the 1970s, Canada prepared to protect that same sovereignty with a symbolic presence of the Canadian Armed Forces.

In a simplistic manner, presence was equated to protection of sovereignty. To this end, a number of programs and projects were initiated, some of them quite innovative in their approach. Land, air and sea components of the Armed Forces were all involved in this return to the North. With a few notable exceptions, however, the number of Canadian troops stationed permanently in the North was not increased. The Department of National Defence argued with effect that

> it is felt that our operational units can most economically and effectively be stationed at southern bases and moved to the North when required for a particular operation.[2]

The exceptions, discussed below, were small installations designed to control and co-ordinate northern training and operations.

In 1970, Maritime Command, the integrated forces equivalent of the navy, sent its ships into northern waters for the first time since

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[1] Debates, (Mitchell Sharp quoting a speech of the Prime Minister given on 24 October 1969), 20 January 1970, p. 2713.

[2] Canada, DIAND, Government Activities in the North, 1970, p. 94.

1962. The navy clung tenuously to its anti-submarine orientation, for the main purpose of the deployment was

> to allow (Maritime) Command sailors and airmen to gain experience in northern operations, mainly in the anti-submarine field.

The secondary objective was "to provide a tangible presence in the Canadian North".[1] It could be argued that the degree of meaningful northern operational experience to be gained by sailing into the relatively well-travelled waters of Hudson Bay and Strait at the height of the summer shipping season was probably quite limited. The true focus of sovereign contention was the Northwest Passage well to north of the ships' operating area. Still, it was a start. The operational support ship, HMCS Protecteur, three destroyer escorts, and a submarine cruised and exercised in the Bay and Strait, visited Churchill, and, at the request of the Department of Northern Affairs, undertook resupply tasks at Coral Harbour on Southampton Island, at Rankin Inlet on the west coast of the Bay, and at Frobisher Bay on Baffin. In addition to NORPLOY, as the naval northern deployments have come to be called, Maritime Command also began to take its first tentative steps in regaining expertise in ice filled waters. Not having an ice-breaker of its own, the Navy made arrangements to have several officers, cadets and ratings attached to ice-breakers of the Canadian Coast Guard for "arctic indoctrination".[2]

Maritime Command's patrol aircraft were even more involved in northern operations, for theirs was a year-round task. On the average, four long-range surveillance patrols were undertaken each month by Argus aircraft flying out of bases in Nova Scotia, Prince Edward Island, and

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[1] J. L. Wilson, "Our Ships Head into the Arctic Seas Again" Sentinel, November-December, 1970, p. 6.

[2] Government Activities in the North, 1970, p. 94.

British Columbia. A total of 1900 flying hours was expended on these operations during the year, while the smaller Tracker aircraft accounted for an additional 300 hours along the coasts of northern Quebec and Baffin Island. To support these greatly increased flying activities, Maritime Command established a small detachment at Frobisher Bay to provide operational support, hangerage, accommodation, and communications for the patrols who inevitably staged through Frobisher at one point or another on a northern flight.

Mobile Command (the "army" of the Canadian Forces) initiated a continuing series of arctic indoctrination patrols in April of the same year. Named Exercise New Viking, the project took Canadian combat soldiers to places in the North where troops had never exercised before.[1] The headquarters for the project was permanently established at Churchill in facilities loaned to DND by the Department of Public Works. A small staff of less than thirty instructors handled a new group of candidates every two weeks on a year-round basis. Each succeeding exercise followed a more or less fixed format. Air Transport Command aircraft would fly the troops into Churchill during the winter and to an advanced base at Resolute in the summer. The first week of the patrol was devoted to verifying an acceptable standard of proficiency and in dealing with operational problems that were unique to the Arctic. These latter included learning how to deal with the high wind chills of the barrens during winter, navigating using the astro compass in areas of high magnetic fluctuation, and precautions necessary to protect the northern ecosystem. Following the work-up week the aircraft would then re-appear and fly the troops to an advanced patrol base. These might be any of the

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[1] Government Activities in the North, 1971, p. 84.

communities with suitable air strips in the Arctic: Baker Lake, Rankin Inlet, Frobisher, Coral Harbour, Sacks Harbour or the Arctic Weather Stations at Mould Bay, Isaachsen, or Eureka. At the end of the runway the troops would shoulder their rucksacks and strike out on their own. A typical patrol would cover about fifty kilometers during the week, the distance the troops could cover being limited by the fact that they were on foot.

In addition to the New Viking program, Mobile Command repeatedly exercised the newly formed Canadian Airborne Regiment in parachute assault exercises in the North. In quick succession the Regiment dropped at Coral Harbour, Inuvik, Watson Lake, and in Alaska in a joint Canadian-American exercise. While the New Viking program emphasized arctic indoctrination, the Airborne Regiment clearly was developing and practising combat techniques in the North. Should the "unthinkable" ever happen and Canadian troops be obliged to fight to regain northern territory, the isolation of the area made it inevitable that any operation would have to begin with the establishment of an airhead: hence the origins and training of the Airborne Regiment.

During 1971 and the early winter of 1972 the extent of military presence continued to grow, the programs of 1970 being continued and expanded. Argus aircraft flew 43 missions during the year for a total of over 2,000 flying hours. In August three ships from Maritime Command cruised and showed the flag in Davis and Hudson Straits. New Viking serials continued; at year's end, over 2,200 troops had received arctic indoctrination. Mobile Command exercises saw the entire Airborne Regiment dropping at Resolute Bay in December. A few months later, a major exercise (by Canadian standards) was attempted at Frobisher Bay. Christened Exercise Patrouille Nocturne, it began when an airborne

commando group captured the airstrip in the face of light "Fantasian" opposition. A massive airlift brought infantry, armoured, and artillery units into the air head. A flight of CF5 tactical fighters successfully staged into the Arctic to provide ground support for the combat troops. In all, over 1,500 troops were deployed into the Eastern Arctic. In subsequent years, the same pattern continued. The air force flew its periodic surveillance missions with the ancient Argus aircraft. An operational support ship (AOR) of the navy cruised in northern waters during ice free months and the army continued to exercise sub-units and the Canadian Airborne Regiment in both summer and winter throughout the North.

It is evident that the vast majority of those military forces that were providing a presence in the North were transients. The operational units of the sea, land and air element that periodically exercised in the North were not exclusively concerned with the area. In point of fact, all these southern-based units were multi-tasked and the northern commitment formed only a relatively small part of their operational role. In this respect, Canada maintained her traditional posture of using multi-purpose units based to southern Canada to perform specific northern-related tasks of relatively short duration. It is not clear whether the Canadian Forces ever even considered the option of actually stationing combat forces of any or all of the three elements in the North on a permanent basis. Certainly the cost would have been high, especially if troops were to be permitted to bring their families with them with the attendant need for housing, schools, shopping, and recreational facilities, etc. Those few military elements stationed permanently in the North were "in the North", not "of the North". The Supplementary Radio System stations at Inuvik and Alert were primarily concerned with communications research. The DEW Line main sites were primarily concerned with continental air

defence.

While the Department of National Defence continued in its time-honoured pattern with respect to the employment of operational forces in the North, a significant departure from tradition was signalled by the formation of a headquarters specifically devoted to the coordination of military activities in the North. The decision to create such a facility was announced in September 1969 by Leo Cadieux, the Minister of National Defence; the location of the headquarters, its composition, and specific functions remained to be determined. Studies were undertaken within DND in consultation with the Department of Indian Affairs and Northern Development and the two territorial governments. In February, 1970 four-man liaison detachments were established in Whitehorse and Yellowknife, the territorial capitals.

The Manitoban press argued that the new base should be established at Churchill. Certainly, in pure military terms--communications, accessibility, location, and terrain, the moribund community had much to recommend it. The editorial in question, however, anticipated that a battalion-size force of operational troops and some air support resources were to be permanently stationed in the North. This was definitely not the intention of the Department of National Defence. Although the argument for the location of the base at Churchill was couched in military parameters, the real reason the Tribune's editor wanted to see it there was to help boost the sagging economy of the community. He wrote:

> Establishment of a major three-services base at Churchill will not be the economic cure-all for Churchill, but it would go a long way toward hauling the community back from the brink of ruinous stagnation.[1]

While Churchill offered many advantages as a base site, it

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[1]Winnipeg Tribune, 16 April 1970.

lacked the key ingredient. The Department of National Defence at the time wished to establish a facility that could co-ordinate military activity in the North, and at the same time effect the necessary liaison with other branches of the federal government operating in the North and the territorial governments. The obvious choice, in these terms, lay between the two territorial capitals. The Yukon, with its continental location, relatively well developed road and air net, and advanced political institutions, figured only peripherally in the sovereignty equation. The sovereignty concern centered on the High Arctic of the Northwest Territories. The headquarters of Northern Region, by this logic, had to be in Yellowknife, and the decision to locate it there was announced on 17 April 1970. A small liaison detachment of Northern Region was also to be maintained in Whitehorse.

By the autumn of 1971, NRHQ, commanded by then Brigadier General Ramsey Withers, was in full operation, approaching its job with a high degree of dynamism and enthusiasm for the North. NRHQ was not established as an operational headquarters but as a liaison and co-ordination center. Elements of other Commands stationed in the North or operating in the region remained under the command and control of their parent headquarters. NRHQ did have the capability, however, to exercise command over units placed under its control for a specific mission. Many of the roles assigned to the headquarters were typical of those undertaken by any regional military headquarters in southern Canada--the preparation and execution of plans for aid of the civil authority, support of search and rescue operations, and the administration of cadets. In some important respects, however, the new headquarters was different. NRHQ was given the responsibility of maintaining liaison between the Department of National Defence and the territorial governments and other federal departments

operating throughout the North. In addition, the headquarters was required to establish and maintain a northern information data bank to support operations and training of all elements of Canadian Forces deployed into the North. A perhaps inevitable role that fell to NRHQ was to be interpreter of the North for the rest of the Canadian Forces. The new interest in the North resulted in a steady procession of military visitors passing through Yellowknife. In particular, members of the National Defence College, students of the Canadian Forces College and the Land Forces Command and Staff College became regular annual pilgrims to what was to become the fount of military knowledge in the North. NRHQ provided a wide range of briefings on general and specific aspects of military activity in the North as well as general orientation talks and discussions of contemporary northern problems. When appropriate, the headquarters arranged for guest speakers from the territorial government, DIAND, RCMP, and industry to meet with and talk to the visiting groups. Senior officers of CFNR also travelled frequently to southern bases to "preach the gospel" of the military in the North.

In its early years, NRHQ smoothly settled into operation and within its limited resources attempted to fulfil its many roles in a mandate that included 40 per cent of Canadian territory. The most significant accomplishment of the headquarters, however, did not relate to the day to day liaison and support of military operations in the North, but rather its attempt to analyse the complex political notion of protection of sovereignty as a role for the Armed Forces. The analytic model developed by the commander and staff of NRHQ deserves some attention as it represents the only serious attempt by Canada to define protection of sovereignty beyond some vague notion of "presence".

The analytic model posited three classes of northern anomaly

that might threaten Canadian control over the North. The first was called a tactical anomaly and related to acts by foreign military forces which, while stopping short of an outright attack on Canada, did, in some way, threaten sovereignty. Included in this class were such operations as overflights of Canadian territory by military aircraft, transits of Canadian internal waters by foreign warships or submarines, and a military lodgement--the establishment of a garrison at some remote location in the Canadian North for whatever purpose. The second class, named a commonweal anomaly, dealt with natural or man-made disasters that threatened the ecological stability or social well-being of the North and its people. Included under this grouping were such phenomena as flood, fire, storm, pollution and air crash. The third class was called a sovereign anomaly and it related to actions by foreign companies or individuals who, without direct governmental sponsorship, acted contrary to Canadian law. This last was by far the most subtle of the three classes of anomaly, but, at the same time, it was thought to be the most likely to occur. It included such activities as game poaching, unlicensed mineral exploration, or failure to meet government standards in any industrial process. Because of the size of the North and the paucity of government control agencies, NRHQ felt that illegal activities of this type might well be risked on the probability that their detection by agents of the Canadian government was slight.

In a further development of their model, NRHQ posited that the Canadian Forces should develop the capability to respond to each class of anomaly. Response included a surveillance component in order to detect the anomaly in the first place, a reconnaissance component in order to investigate and define the exact nature of the anomaly, and an enforcement component wherein military forces were, if so ordered, to neutralize

or eliminate the anomaly. It was realized fully that the Forces did not have exclusive responsibility for the protection of sovereignty in the North, but that many other federal agencies shared in the function. In particular, the Royal Canadian Mounted Police, the Department of Transport, the Department of the Environment, the Department of Industry, Mines and Resources, and of course, DIAND and the territorial governments also participated. The ultimate responsibility, however, remained with the military.

When one analyses the configuration and equipment of the Canadian Forces at the beginning of the 1970s, it is evident that in terms of the NRHQ anomaly model, the capacity to protect sovereignty was extremely limited. Submarine penetrations of Canadian northern waters called for fixed array sonar to detect the incursion and nuclear submarines to respond. Canada had neither. It is difficult to envisage any sort of naval surface engagement in ice choked waters. In this respect Canada was fortunate for Maritime Command had no ice capable ships, let alone naval icebreakers. Only in response to a small lodgment by ground troops, the most unlikely event of all, did Canada have a significant capability in the form of the Canadian Airborne Regiment and two air portable brigade groups. Even there, however, detection of a concealed base lost in the vastness of the North would have been extremely difficult, and the standard Canadian tactical ground support aircraft, the Northrop CF5, was extremely limited, because of range and landing field requirements, in the northern areas in which it could operate. Tactical air anomalies occurring in the High North, while they might have been detected by DEW Line radars, were well beyond the range of the southern based CF101 interceptors, and no facilities existed to permit these aircraft to operate in the North. It should be noted, however, that the difference between protection of sovereignty

from tactical anomalies and defence of Canada is extremely blurred. In all likelihood, should a military response to such a phenomenon ever be required, Canada could count on substantial material support from the United States.

Commonweal anomalies presented no particular problem to the forces except in the matter of surveillance. The chance that an Argus patrol aircraft might just happen to be the first at the scene of a disaster was extremely remote. The extensive net of RCMP and Ministry of Transport posts in the North would no doubt be the first to detect and report a serious problem. Military reconnaissance aircraft could then be ordered to the disaster site to define its dimensions. Helicopters and parachute trained personnel could also be deployed quickly into remote areas if a ground investigation were required. In respect of labour intensive situations such as a flood or a fire, the same capability that allowed the military to respond to a lodgment could have been employed in the reaction phase.

Response to sovereign anomalies presented an entire new range of problems to the Forces. Detecting a single event in 1.5 million square miles in the absence of an intelligence input was most unlikely. A more subtle problem was even if a patrol aircraft did detect some hitherto unrecorded human activity, there was no guarantee that that activity would be recognized as a sovereign anomaly. The very nature of sovereign anomalies made it unlikely that the military could play a significant role in the investigation and definition phase. Military involvement might well have to be limited to providing air transport to the site for RCMP or other government agents. Even this service might not have proven necessary since most government agencies either operate their own aircraft or have charter arrangements with commercial firms. The enforcement

component of response to a sovereign anomaly again raises the question of the appropriateness of a military response to a non-military challenge.[1]

This then was the problem faced by the Canadian Forces when they returned to the North in strength. They were singularly ill-equipped to meet military challenges in the region. Their precise role and utility in responding to non-military challenges was not clearly perceived by the general public nor, for that matter, by the military itself. However, when the government had suggested that the primary role of the Forces should be the protection of sovereignty, the media assumed despite repeated political and military denials, that challenges to that sovereignty in the form of tactical and sovereign anomalies were either occurring or were imminent. With this thought in mind there developed a growing public clamour that the surveillance capabilities of the Forces be improved. There seemed to be a notion that if only the Forces could look harder, more often, and with better equipment, that somewhere they would find a challenge to sovereignty.

NRHQ's anomaly model remained a very much "in house" document and received only minor distribution and examination within the Department of National Defence and hardly any at all in public debate and discussion of the North or defence policy. Public attention in the House of Commons and in the popular press focussed on the need for presence. By 1972 government policy with respect to the level of force commitment to the

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[1]The Montreal Star in an editorial whimsically observed that while the Canadian Forces could attack and sink a foreign oil tanker attempting to operate in northern waters without proper safeguards in defiance of Canadian law, such "an inspiring demonstration of sovereignty . . . would not do much for the environment". Montreal Star, 27 February 1970. The editor might have added that such an act would not have done much for United States-Canadian relations either--the former being the only nation considering using tankers in the North.

protection of sovereignty in the North had become clear. The scale of this operational presence was often seen as insignificant when placed upon the vastness of the North.

The main focus of public criticism of northern defence policy was not that northern sovereignty was not important, or even not that it was the most important priority, but rather that the government should have been doing more. Criticism of this nature predominated between 1970 and 1975.

The Ottawa Citizen reprinted an editorial that had appeared in the Edmonton Journal which openly sneered at the extent to which a military presence was being established in the North:

> Any nation casting greedy eyes on our Canadian Arctic had better watch out.
>
> We may seem defenceless but . . . an invader will be met with the massed might of the Canadian Forces Northern Region with headquarters at Yellowknife.
>
> On hand to defend our million and a half square miles of forest and tundra will be 40 members of the Canadian armed forces, stationed in a new office building now being constructed in Yellowknife. What's more, we're stepping up the number of sovereignty flights so that an Argus patrol aircraft now wings its way across the Arctic once a week instead of once every 10 days.
>
> This is the result, so far, of making the defence of Canada's own territory, especially the Arctic, the "first priority" of the nation's defence policy.[1]

The Journal editorial missed the point of northern defence programs on almost every count. NRHQ existed to co-ordinate the activities of those southern-based operational forces who were deployed into the North to establish a presence. In any case, no argument was developed by the Journal as to why combat troops should be based in the North permanently, nor where they should be located, or, most importantly what they should do.

John Gellner, the editor of the Canadian Defence Quarterly and one of Canada's most astute, if somewhat "hawkish", defence critics, examined

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[1] Ottawa Citizen, 8 October 1970.

the country's new defence priorities in the light of equipment and personnel costs. In his view, surveillance of just the Northwest Passage and the development of facilities to just monitor sub-surface activity would be extremely costly. He noted no inclination on the government's part to spend such monies, and noting, in 1970, that the defence budget had been frozen until fiscal 1972/73, dismissed the "new model" of Canadian defence as a paper declaration rather than real change until such time as monies were made available to purchase north-oriented equipment.[1]

Vice Admiral J. C. O'Brien, then a serving officer commanding Maritime Command, went even further in a speech given in March 1970. He claimed that "If Canada is serious about asserting its sovereignty in the Arctic, it must be prepared to pay a fantastically high price". The admiral estimated that it would cost 2.5 hundred million dollars for six nuclear powered attack submarines, greatly increased air surveillance, the installation of a vast network of navigational aids, greater militarisation of the Canadian Coast Guard and a naval capability to escort merchant ships in the Arctic. In O'Brien's eyes such an effort would be required to monitor and control the military and commercial activities of the United States. He said, "It's pretty obvious there's only one nation we need to worry about encroaching on our sovereignty. The only way to combat it is to be there and prove you care".[2]

The sovereignty patrol aircraft, no matter how configured, could only detect surface targets on land or on ice covered seas. By 1970 Canadians had developed an intense curiosity about what was going on under

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[1]John Gellner, "Bold statements but little money", Canadian Aviation, October 1970, p. 18.

[2]Vice Admiral J. C. O'Brien, "Address to Canadian Naval Officers Association", reported in Montreal Star, 2 March 1970.

the ice pack of territorial waters. While experiments were conducted with fixed array sonars in ice-filled waters, such a facility offered only a limited capability. Detection was only a third of the sovereignty equation--investigation and, if necessary, enforcement were the others. To meet this full requirement there was only the nuclear submarine.[1]

It is quite apparent that the Navy would have very much liked to have had a modest fleet of these craft. Michael Forrestall, who had been advocating nuclear boats for Canada's Navy for a decade, expanded his arguments to include the value of such vessels in the North. His arguments were hard to refute. He said:

> There are many reasons why Canada should have this equipment, such as the commercial application, the scientific application and the presence within our Department of National Defence and other government circles of knowledge of what is happening in our North.[2]

Earlier in the same speech he had pointed out that "the nuclear powered submarine remains the only piece of equipment that can operate 12 months a year in our northern latitudes". Overriding all these arguments, however, was the matter of money. The Subcommittee on Maritime Defence of the Standing Committee on External Affairs and National Defence (SCEAND) was perfectly aware of all the many advantages inherent in nuclear

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[1]Dr Colin Gray has produced a cogent argument along the line of "If a tree falls in the forest, and there is nobody there to hear it, is there a noise?" Gray asks the question, Can one state challenge the sovereignty of another if the challengee is unaware of the challenge. His reply is negative and with respect to foreign submarine activity in the Canadian Arctic, he maintains that unless Canada is prepared to purchase nuclear submarines to investigate incursions and to enforce Canadian political will, it would be preferable not to deploy detection equipment and find oneself in the embarrassing position of knowing that Canadian law may be being broken, yet being unable to do anything about it. See C. S. Gray, Canadian Defence Priorities: A Question of Relevance (Toronto: Clarke, Irwing & Company, 1972), pp. 149-150.

[2]Debates, 22 October 1970, p. 472.

submarines, but had recommended that they not be acquired at that time (1970) "solely on the basis of cost".

Forrestall argued the case for the nuclear submarines as a means of protecting sovereignty. Others simply had no idea of the issues involved. At the time SCEAND was discussing the advisability of acquiring three to five nuclear powered submarines, the Winnipeg Tribune, one of Canada's major newspapers, produced a startling editorial entitled "Nuclear nuttiness" which read in part:

> . . . (T)here would be other serious implications about Ottawa getting into the nuclear submarine business. Asserting sovereignty over the Arctic is one thing. Having nuclear submarines with missile capability prowling the northern seas is quite another. What would the Kremlin do if Canada were to initiate this kind of patrol activity within easy striking distance of Soviet territory.[1]

It was ill-informed comment of this sort that lent confusion to the debate on northern defence policies and did nothing to contribute to public understanding of the issues. The editor, it would appear, was not aware of the difference between a submarine simply fitted with a nuclear power plant and a submarine armed with a nuclear weapons system. There has never been the slightest suggestion from any responsible source that Canada should acquire the latter capability.

Those who advocated the acquisition of Canadian naval ice-breakers or Arctic Patrol Vessels seem to have forgotten about the ships of the Canadian Coast Guard that operate regularly in northern waters. Captain T. C. Pullen, claimed that a government policy formulated along lines outlined in the 1971 White Paper was "sheer hypocrisy when you consider that we don't have the means of employing the ships to ensure an effective presence" in the arctic waters. He advocated the construction of a fleet of polar class ice breakers in Canada for Maritime

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[1] Winnipeg Tribune, 23 June 1970.

Command.[1]

A naval ice-breaker would be a rarity in today's maritime world. Most nations with polar interests operate ice-breakers but as part of the coast guard, or some other civil department of government. For Canada to acquire naval ice-breakers in addition to her civil fleet would be a form of message to the rest of the northern world. Just what that message would be and how it would be interpreted is open to debate. A serving naval officer recently wrote that it was questionable if surface warships had a role in the Canadian Arctic. He felt that the Canadian Coast Guard ice-breaker fleet was perfectly adequate to establish sovereignty.[2]

The Progressive Conservative Party entered the debate in a modest form during the 1974 election campaign, accepting implicitly the Trudeau thesis that protection of sovereignty, particularly in the North, was the first priority for Canadian Armed Forces. Although defence policy figured only marginally as an election issue, the Conservative platform on the subject called for a massive increase of military presence in the North. They viewed Canada's claim to the Arctic Archipelago as tenuous and sought to redress this situation by raising new air and ground forces dedicated exclusively to operational roles in the North. To support these units the Conservatives advocated the reopening of some unspecified bases that had been closed in the past and the establishment of new bases. Continuing in the theme of "something for everybody", the Conservatives advocated the acquisition of advanced technology naval ice-breakers for arctic patrol

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[1]Capt T. C. Pullen, Canada and Future Shipping Operations in the Arctic, Canadian Defence Quarterly, Vol. 2, No. 2, Autumn 1973, p. 13.

[2]LCdr R. H. Thomas, "Ships for the eighties", Canadian Defence Quarterly, Vol. 2, No. 2, Autumn, 1972, p. 16.

duties.[1]

The frustration of non-government agencies and individuals with the Liberal administration's implementation of its northern defence policy was admirably summed up by John Gellner in the autumn of 1975. It is important to note that there was no quarrel at all with the priority given to protection of sovereignty, only the manner and degree to which active measure were taken. Gellner cited the severe inadequacies of the Argus maritime patrol aircraft in the northern surveillance role, the lack of northern bases to support surveillance activities, and the lack of undersea surveillance in arctic waters.

> Canadian governments have been making that claim for a long time, more stridently of late than ever before and rightly so because of the growing danger of our sovereignty being put to the test. What government has not done and continues to postpone doing is to invest the money and effort which are necessary to back up that claim.[2]

Over a seven year period (1969-1975) successive Liberal governments, in the face of considerable political and public pressure to do so, steadfastly refused to increase the level of Canadian Forces presence in the North. During the period there have apparently been no challenges to Canadian sovereignty in the North either by foreign states or foreign companies or individuals. The government could argue that the level of activity established at the beginning of the period of northern resurgence has been adequate to protect sovereignty and any possible challenges have been discouraged by the presence of Canadian military units throughout the North. The fact that protection of sovereignty is the top priority of defence department roles does not necessarily demand that the bulk of

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[1]Progressive Conservative Policy Paper #10, "National Defence" 1974 (Provided by Mr A. Mackinnon, Opposition Defence Critic, 3 March 1976).

[2]John Gellner, "How Canada showed it can't control Arctic", Toronto Globe and Mail, 17 September 1975.

military resources, personnel, and funds be devoted to that priority. It could be argued that priorities are more a matter of intent and should some concrete challenge develop in the future the government could simply devote additional resources as required to meet that challenge and still remain consistant within established defence policy.

Military effort in the North of the 1970s was not restricted to searching for, investigating, and, if necessary, dealing with challenges to Canadian sovereignty. The military was also assigned a modest range of national development tasks in the region that were in keeping with governmental policy or the North as a whole. In the sense that these projects contributed to the development of various facets of the northern transportation grid and hence helped link the North into the mainstream of southern Canada, they could be considered as being contributory to northern sovereignty.

The main project undertaken within this category of endeavour was the multi-departmental Northern Airfield Project.[1] The Department of Indian Affairs and Northern Development had a long standing program of providing remote Arctic settlements with year-round air services. When Canadian Forces construction engineer units were made available, the project timetable was able to be advanced considerably. Over a five year period it was agreed that basic 2,600 foot gravel strips would be built at Chesterfield Inlet, Pond Inlet, Whale Cove, Igloolik and Cape Dorset. A few of these communities already had primitive landing fields, but none were suitable for year-round use. The agreement was that DIAND would fund the project, DOT would define the design specifications and transport most of the construction materials to the sites by sea, and Canadian

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[1]See "Airstrips for the North", Sentinel, November-December 1970.

Forces troops would do the actual construction. The 2,600 foot airstrip was capable of accepting most of the twin-engined, short-take off-and-landing (STOL) aircraft being operated commercially in the Arctic at this time. At four of the sites DND provided the funds for lengthening the strips to 4,000 feet to accept the heavy Hercules C130s of Air Transport Command.[1]

The Northern Airfields Project was a useful undertaking in that it satisfied a number of needs all at the same time. First and foremost, it contributed to the development of the northern infrastructure and lessened the isolation of the communities it touched. This in itself was the basic stuff of sovereignty. The summer construction season is the time of maximum human activity in the North. The troops actually on the ground and the military transportation and resupply flights to the sites provided a military presence where one had rarely been seen before. By adopting a policy of incorporating local labour into the military work force, the engineer units provided an opportunity for wage employment at a time when the Eskimo culture was unstable. The 4,000 foot strips increased military flexibility in the area by providing landing sites for the main troop lift and transport aircraft of the Canadian Forces. They also offered an expanded range of forward bases for air search and rescue operations. The project did not conflict with civilian construction contracts in the North, for it was not a question of a military contractor or a civilian contractor. With the limited amount of money available for the work it was a question of a military contractor or nothing. The federal government put the needs of the North ahead of southern commercial interests.

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[1] "Northern Airstrips", Canadian Aviation, January 1973.

In a separate but similar program, the Canadian Forces undertook bridging projects on the Dempster Highway which was being built to link the Yukon with the lower Mackenzie Valley. Bridging the Ogilvie River between Inuvik and Fort McPherson[1] began in 1970 and following its completion in 1971 the troops turned to the Eagle River in 1973. Like the airfields projects, funds were provided by DIAND while the Department of Public Works did the design work and the Canadian Forces provided the actual skilled work force.[2] While both the bridging and the airfield projects were initially planned for a specific number of sites, they both were open ended in the sense that when the first phase was completed the program could well be extended to other localities as part of a continuing development process.

These programs went a long way towards meeting the recommendations of the Military Engineers Association of Canada which argued that "The Canadian Military Engineers of all ranks be employed in Northern Development Work and pre-engineering studies of future projects of National importance". By reopening this field to military engineers (they had lost it with the army withdrawal from the Alaska Highway) it was thought that a professional engineering challenge would develop which would help attract the "right calibre" of personnel to military engineering trades in peacetime. It was also seen as a means of exposing troops to exacting tasks under difficult conditions and to providing the opportunity to develop skills that had a definite military application.[3] On the negative

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[1] DND Canadian Forces Press Release, 15 April 1970. The Dempster was one of John Diefenbaker's "roads to resources" started in 1955. It was finally opened to traffic in 1979.

[2] Ibid., 30 May 1973.

[3] Cited in Lt Col J. G. Wasteneys, "The Place of the Military Engineer in Meeting the Challenge of the Canadian North", Canadian Defence Quarterly, Vol. 2, No. 1 Summer 1972, p. 18.

side of the program was the fact that due to the reduction in force size that accompanied the new defence orientation, the requirement to deploy field engineers into the North during the summer construction season degraded the level and scope of the Army's traditional collective training during the same period.

Not all of the subsidiary northern projects related to national development in terms of engineering. One related to people, but in this instance, the military's new-found enthusiasm for the North led it into embarrassing difficulties. Prior to the resurgence of the 1970s very few native northerners showed any interest in regular military service, nor did the Department of National Defence made any effort to recruit in the North. The lack of northerners in the Canadian Forces at a time of high military involvement in the area was striking and in response to a question in the House, Leo Cadieux announced a major effort to "increase (Eskimo) participation in the armed services".[1]

In May 1971, the Department of National Defence launched a program aimed at recruiting a hundred young northerners into military trades that were required at the Supplementary Radio System bases at Inuvik and Alert. Only a handful of candidates came forward and of these, less than a dozen managed to complete basic training. The military's problems did not end there. The successful candidates were posted to Inuvik where they all experienced extreme stress in coping with the often conflicting demands of military and traditional culture. Within a year, all those who remained in the Forces had to be transferred to southern bases.

In retrospect, the entire program was not well thought out and illustrated, once again, how much southerners still had to learn about

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[1] Debates, 17 April 1970, p. 5991.

the North and its peoples. Commenting on the military potential of Eskimos, one senior officer said, "He has his own culture but is the sort of man who could become Western very easily, become one of us".[1] The vast majority of Eskimos wished to retain their own culture; that minority which wished to opt out and join the mainstream of Canadian life probably wished to do so in the more comfortable surroundings of southern Canada.

In a press interview, one general officer said:

> the ones we're looking for are mobile and have a self-navigating capability and roam a lot . . . . They have an ability to find themselves and get to a pre-determined destination. They can take a trip of 800 or 1,000 miles and know exactly where they are . . . with no gear, maps or charts . . . .[2]

Another added that "we want the boys to go back up there because they know their native area".[3] Statements such as these ignored some very fundamental northern realities. First one does not "know the area" of the entire North as one can know a town or county in southern Canada. In any case, the relevence of the admired skills is hard to fathom since the Eskimo soldiers were slated to be stationed at permanent static bases. No Eskimos lived, or had ever lived within hundreds of kilometers of Alert at the northern tip of Ellesmere; Inuvik was the largest city in the Mackenzie Valley. A more fundamental flaw in the military's logic lay in the fact that if the 18-23 years olds the Forces were attempting to recruit had the basic educational qualifications to join the Canadian Forces, the attaining of this education would of necessity have removed them from the traditional nomadic life wherein these much-vaunted skills would have been learned. Conversely, the older Eskimo who had followed the

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[1] Toronto Globe and Mail, 23 September 1971.

[2] Ibid.

[3] Ibid.

traditional life was most unlikely even to speak English let alone have any formal education.

A more serious problem might have arisen had the Forces been able to find the sixty research communicators they sought for the potential impact on northern communities of such a program would have been severe. The nature of the communications research trade is highly technical and requires a substantial formal education in tradesmen. When one considers that, at best, the total Canadian Eskimo population was less than 25,000, one could honestly ask if Eskimo communities could afford to lose their best educated young people to serve in the Forces. The matter would have been particularly acute when one considers the developing set of Inuit priorities of that period. There was a perception that Eskimos should produce their own lawyers to argue their land claims, their own administrators and politicians to run their communities, their own businessmen to run their cooperatives, their own teachers to instruct their children. Surely, in terms of the federal government's northern goal of meeting native peoples' aspirations these latter professions should have taken precedence over military service that would have taken Eskimo soldiers out of the mainstream of Inuit life. In this sense it is fortunate for the North as a whole that few Eskimos have come forward seeking a military career.

This study concludes in 1975. By that time Canadian Forces had re-established themselves in the North to an unprecedented degree. While there were fewer troops permanently stationed in the region than there had been in the late 1950s, Canadian servicemen from all three services were continually being exposed to the northern environment. The establishment of a Northern Region in the Forces' organization underlined the fact that, for the first time, the Department of National Defence was

prepared to admit that the North had an intrinsic value to the country as a whole and that a military presence was required in the area. The Canadian Forces have recognized and accepted the uniqueness of the North which is the first step in understanding the area. Within the limits imposed by available equipment and funding, they learned how to live and to a limited extent operate "North of 60", and found the challenge of doing so an interesting one.

The impact of the renewed military presence on the North has been slight. No sovereign challenges have taxed the Canadian Forces. No threat of military conflict looms on the northern horizon. No Eskimo or northern Indians serve Canada in the military in the North. Northern construction projects undertaken by the military have significantly improved the northern transportation grid, but no great commercial or industrial development has accompanied this greater capacity for man to move in the vastness of the North. In 1968, the new Trudeau administration and Canadians in general, felt that, finally, the often anticipated but never realized massive northern development surge was about to occur. In many ways the matrix of alternatives as perceived in 1975 was even more complex than it was seen to be in 1968 particularly with respect to cultural and ecological stability versus exploitation of non-renewable resources. As Canadians learn more and more about their last frontier, hitherto unknown relationships, conditions and constraints come to light. Given all these uncertainties, the specific future role of the military in the North is understandably unclear.

Over a century ago, a British soldier, Captain W. F. Butler, travelling in what was then "The North" called it "The Great Lone Land". That image is still valid.

CHAPTER X

CONCLUSION

The Land of Tomorrow

Canadian history, in the years since the formation of the Confederation in 1867 may be seen in terms of successive or overlapping imperatives. Initially there was the western imperative to establish and develop the nation along the east-west axis. At the same time, but extending well into the twentieth century, there was the imperial imperative driving the nation to define and develop its position within the British Empire and Commonwealth. Following the end of the Second World War, what could be called the continental imperative developed wherein Canada attempted to define her place and protect her national identity in the pervasive cultural, economic and defence relationship with the United States. At present, a national imperative drives Canadians to determine the manner in which the country will or will not develop politically with particular emphasis on the place of the French speaking province of Quebec in the nation.

These imperatives captured and dominated the collective focus of virtually every segment of the nation. Political, economic, cultural, intellectual, military and popular interests for extended periods were on the issue of the imperative. Conflicts between various interest groups were rife and were encounted at virtually every stage of the resolution process. Ultimately, all of these imperatives, except the

last, which is ongoing, were resolved in a manner that was satisfactory to a majority of the Canadian population.

There has never been a northern imperative.

The Canadian North is the land of tomorrow. So it was when the region was ceded to the country in the 1870s and 1880s, so it was into the present, so it is for the foreseeable future. The romantic image of the North as the last frontier is popular in Canada. This is an attractive image. Few nations in the modern world are blessed with an internal frontier that offers a human challenge to develop, to create and to protect--if not this day, this year, or this generation--then Tomorrow.

Canadians have historically seen the North as being too distant, too hostile, too isolated or too barren to warrant the full focus of the national interest. Two results follow from this perception. The first is that in the absence of detailed scrutiny and interest, the North is historically and contemporaneously seen in simplistic terms--not only in the popular mind, but in the various foci of power in the nation. The North was initially seen as a wasteland barrier, later as a strategic approach, and currently as an ecologically sensitive potential source of raw materials. The northern reality is infinitely more complex.

The second implication of the lack of a northern imperative is that those few Canadians who have been involved with the North have never quite determined what to do with it. The land of tomorrow calls, but the call is not clearly understood. Should the North be exploited, developed, conserved, protected--or all of these? And if all, what is the resolution between exploitation and conservation or development and protection? And what of the handful of people who make up the races

who have lived in the North since prehistoric times?

In reality, the issues are so complex, and the data base upon which to make decisions so slender, that thoughtful northern decision makers have come to realize that it is best to proceed with extreme caution, if at all. At the level of national government, the historic preference is for symbolic acts or programs designed to keep options open as opposed to the initiation of major projects that carry with them extensive commitments of resources to a unique course of action.

The notion of symbolism is fundamental to an understanding of the development of the Canadian North and the role that the military has played in the drama. The list of symbolic acts is long--from Captain Bernier's flag raising expeditions at the turn of the century, to the establishment of RCMP posts in the Arctic after the First World War, to the presence of small Canadian military staffs on the DEW Line main sites, to the contemporary patrol activities of Canadian land, sea, and air forces in the North. All of these were designed to keep open national options by providing a modest statement of continuing interest and, through presence, theoretically reaffirming control of the area.

The analysis of this study has focussed upon three mains areas--national development, protection of sovereignty and defence. The analysis is complicated by the fact that none of these areas is discrete--all overlap. For example, the creation of a military base in the North inevitably has implications in the realms of national development and protection of sovereignty. The analysis is further complicated by the fact that the American perceived needs for the defence of the United States, even though these needs were also often in the interest of Canada, have been the moving force in the undertaking of virtually all

of the major defence related activities in the North. The manner in which these American sponsored projects were agreed to, executed, and conducted has always been limited by Canadian perceived needs to protect sovereignty in the North. Although Canadians on the whole have done little to develop the North, they are historically extremely jealous of their northern property and northern prerogatives and tend to be adamantly opposed to any foreign activity that would limit future northern options. Again, the image of the land of tomorrow is paramount.

The raising, deployment, and work of the Yukon Field Force, like the gold rush that provoked it, must be dismissed as an historical aberration. There can be no question that the deployment of the Force was an exercise in the protection of sovereignty. In terms of the national political and economical perspectives of the day, the gold rush was not seen as a short term phenomenon but the beginning of a major commercial development process. The presence of the Force in the Yukon was designed to have a deterrent effect on any potential social unrest and hence political instability in the area. That it was probably not necessary is not germane to the argument.

The military activity in the North during the inter-war years is exclusively related to national development. By global standards, or even Canadian standards, this process of development was exceedingly slow. There was nothing that happened over the twenty year period that could not, and in fact was not done in months or at most a few years during the American inspired northern thrust during the Second World War. The military contributions to a northern infrastructure and transportation grid were significant in terms of the total development of the time, but relatively insignificant in terms of the totality of the

entire North. There was minimal development north of the continental land mass and no military input at all.

The entry of the United States into the Second World War created the greatest sustained level of activity that the North has ever seen. While the original intent of all the American-sponsored projects was defence related, the ultimate use of the northern projects in most cases was offensive. No axis power ever attempted or, as far as is known, ever considered attacking North American targets via the Canadian North. The United States used the Canadian North to carry the war to the enemy.

Military facilities flooded the Yukon and Mackenzie Valley but spilled over throughout the continental north and even reached into some of the southern islands of the Arctic Archipelago. At the time, it was anticipated that the defence projects, particularly the air routes, would have major post-war international commercial implications. Technological progress negated this development, but the air routes proved to be important to subsequent national development within the Canadian North.

The United States, its troops, its money, its construction firms and its employees dominated the North. All of what the United States did--or caused to be done, occurred beyond the sight of ordinary Canadians; much of what they did occurred beyond the sight of even the Canadian government, despite not insignificant attempts to regulate and monitor these activities. The American withdrawal at war's end, while called for in the various agreements that had initiated projects, was primarily pragmatic. Immediate or projected defence needs did not require maintenance of existing facilities. Had the immediate post war situation offered the United States commercial opportunity or presented

an identifiable military threat in the Canadian North, there is little doubt that the United States would have pressed for, and probably achieved continuing or even extended rights to maintain their facilities on Canadian soil. That this situation did not arise is a positive benefit in terms of Canadian sovereignty; in terms of national development, progress in the North probably would be more extensive today had the United States continued to be involved and prepared to commit money and resources on a scale available to a major world power.

The Canadian military presence in the North during the war was small in an absolute sense and completely dwarfed by the Americans in a relative sense. A handful of aviators in the Northwest and the peripatetic soldiers on the army northern exercises accounted for the total Canadian military presence in the North. The government and the aviators themselves were conscious of the balancing effect of the RCAF presence in the Northwest Staging Route. One is tempted to draw the same analogy with respect to the army's northern exercises, particularly Musk Ox, but the documentation to support such a conclusion simply is not there. In its absence, the army's first attempts to deal with the North as a potential combat environment must be likened to an experiment in pure research.

The essential military notion of the Cold War period in the North is that western strategists and defence planners saw the region not as a valuable land that warranted protection, but as an approach to urban, industrial and military targets in North America. Rather than requiring defence in itself, the North was seen to provide strategic depth to the continent's defences. All joint Canadian-American defence projects, plans, and training exercises had at least a symbolic and often real Canadian control component reflecting the lessons learned by Canadians

in their dealing with the American military during the war.

These defence activities, particularly the construction and operation of the DEW Line had a tremendous impact on the development of the North in the vital area of extension and improvement of the air and sea transportation grid. Pure national development military projects such as the maintenance of the Alaska Highway and the continued operation of the NWT and Yukon Radio System still reflected the limited degree to which Canadian governments were prepared to commit military resources to northern development. The virtual withdrawal of the military from the North during the 1960s reflected the spiraling intensification of defence technology, changed Canadian defence priorities, and finally, the development of the civil sector to the point where appropriate civil or commercial authorities were able to take over the bulk of national development roles within the North.

The resurgence of Canadian military interest, involvement and presence in the North that characterized the 1970s must be attributed solely to the Trudeau administration's concept of protection of sovereignty as the primary role of the nation's defence forces. There is a tendency to regard the complex political notion of protection of sovereignty as some form of diluted military capability. It seems clear, however, that the Prime Minister's intent was to extend the role and missions of the Canadian Forces. He said, "Our first priority in our defence policy is the protection of Canadian sovereignty, in all the dimensions that it means".[1] In the same speech, Trudeau emphasized that the first defence priority for Canada was not NATO. In point of fact,

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[1]Speech, Prime Minister P.E. Trudeau to Alberta Liberal Association, Calgary, 12 April 1969. John Gellner maintains that Trudeau

no Canadian government had ever maintained that NATO was the first priority, but it was generally agreed that priorities or not, the greatest threat lay in Europe and the North Atlantic and hence the Forces were equipped and devoted the bulk of their training for operations in those theatres.

Simplisticly, defence implies the protection of the nation by the use, or threat of use, of military forces against opposing military forces. Protection of sovereignty, on the other hand, considerably extends the responsibilities of the national military establishment for it requires, in addition to their classical role that they establish a presence in any area where sovereignty may be challenged, conduct surveillance throughout the area, carry out detailed reconnaissance and investigations of suspected anomalies, and ultimately, enforce the national will with the use of military force if necessary. The imposition of such a responsibility takes the military into such diverse areas as fisheries protection, shipping surveillance, ecological monitoring, airspace surveillance, and generalized "showing the flag" operations on the national frontiers. It is important to note that many if not all of these extended roles hold the potential to bring military forces into contact and possible conflict with foreign elements that are private or commercial in nature, rather than official or military.

The programs and projects undertaken by the military during the 1970s were traditionally symbolic but on a more intense level than heretofore attempted but still, in the final essence--symbolic. The creation

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brought to office an indifference to defence matters and a "strong anti-NATO bias" and that increased Canadian commitment to NATO starting in 1975 should not be seen as a modest Canadian response to growing Warsaw Pact capabilities, but as a means to pursuing the political goal of extended economic involvement with the European Economic Community.

of a military region to encompass the North symbolized military intent and commitment. In reality, what the northern headquarters could accomplish was severely limited by its location, small size, lack of dedicated forces, and the sheer magnitude of the North itself. The army ventured into the Arctic on major exercises prior to 1975 but these were more demonstrations of the capability to establish a presence rather than the capability to conduct extended operations at any distance from a suitable airhead. Smaller but more frequent exercises characterized the rest of the decade but again, while Canadian soldiers appeared all over the Arctic, they were, by equipment and training, closely restricted to the close environs of a northern community. In the same vein, deployments tended to be on the order of two or three weeks only, and hence troops could not hope to begin to come to grips with the full range of problems attendant upon extended northern operations. Rather than develop a small cadre of troops highly trained in northern operations, the Canadian military establishment opted to produce a large number of soldiers who had northern exposure and indoctrination. Symbolic presence was seen as being adequate to meet the requirement to protect sovereignty in the North.

The same may be said of the case of the Argus anti-submarine warfare aircraft on long range northern surveillance patrols. Given that the aircraft was not equipped with any significant number or quality of remote sensors and was restricted to a mere handful of paved airfields at which it could routinely land, the Norpats also were primarily symbolic. What was important was not that the aircraft were conducting fully effective surveillance (which they were not), but that the government could claim to be conducting a rational program aimed at protecting

Canadian northern interests. This symbolic program satisfied popular concern for the security of the North. That the various programs could not stand close scrutiny and analysis was not particularly important to the government. The voices of a few critics were lost in the general indifference to the North.

The annual appearance of a naval fleet support ship in the eastern reaches of the Northwest Passage at the height of the annual shipping season similarly seemed to satisfy limited Canadian concern. In some inchoate way, presence is adequate for Canadian governments and the Canadian population at large. That presence does not imply a significant operational capability has either not dawned on the nation, or, again in the absence of a northern imperative, it does not seem to matter.

The Canadian Forces, equipped as they were during the 1970s, were only marginally capable of conducting combat operations in the high reaches of the Arctic--in those lands and waters bordering and north of the Northwest Passage. The navy had no ice breaking or even ice capable ships. Nuclear submarines, probably the most versatile all-season vessel for arctic operations, were never even seriously considered. The air force's radius of operations in the Arctic was similarly proscribed. Both current and projected fighters and patrol aircraft require long paved airfields but in the entire Arctic Archipelago, only Frobisher Bay on the south end of Baffin Island offered such a facility--grâce à la United States Air Force in the 1950s. The army alone had a very limited combat capability--provided that they could be deployed into the objective area. Cross country movement on the magnitude of several hundred of miles was never attempted although theoretically some of the general

purpose vehicles and equipment in the army inventory might have been able to permit such an operation in certain types of terrain and weather conditions.

It is fair to say that the military has had a much greater effect on the North than the North has had on the military. Much of the existing northern transportation grid, the most important segment of social infrastructure, was originally developed by the military. It is important to note that the major developments were by-products of defence related activities, and that these activities were usually American sponsored. The roads, maps, charts, construction techniques and airfields built or paid for by the United States during the Second World War and Cold War were the single most important factor in the opening of the Canadian North. Other projects, conducted by Canadian military forces for pure national development purposes--communication systems, road construction and maintenance, airfield construction and native education programs are simply not of the same order of magnitude in comparison to the massive defence projects of the Americans.

One will look in vain, however, for any evidence that the Canadian military presence in the North has been a significant factor in the continued retention of the North by Canada. The often feared challengers to sovereignty have simply not appeared. The uninhabited lands are such for the very good reason that nobody has ever discovered a human reason to live there. International law and geographical contiguity are the prime forces in preserving Canadian possession. The sovereignty-threatening aspects of American military forces in the North are offset, not so much by a symbolic Canadian military component, but by the treaty arrangements made in Ottawa and Washington.

In reality, the North has had extremely little effect on the Canadian military establishment. It has never been perceived necessary to deploy significant numbers of troops into the region or to acquire specialized equipment for operations there. This is true with respect to protecting Canada from attack across the pole, or to defending the North itself. A handful of Canadian military officers and defence scientists from all services have developed well deserved national or even international reputations as northern experts, but on the whole these men and women have been apart from the main thrust of conventional military concern, interest, and wisdom.

It is no great exaggeration to say that much of the North, including most of the Arctic, has always been beyond the range of Canadian military power. That this power is very minor on a global scale, or that it usually has the implicit back-up support of the United States is not germane to the argument. Although this fact is generally perceived at government and defence planners level, it is probably not as well perceived by the Canadian population at large. The "fire proof house" mentality is almost a race characteristic of Canadians.

The future of the military in the North is by no means clear. Certain areas of potential involvement, however, may be eliminated from consideration with a fair degree of confidence. The Canadian North generally, and the Arctic in particular, will probably never be a theatre of large scale military operation of any sort. The lack of indigenous support structure, the distance from established bases, and the predominantly hostile climate all combine to place absolute limitations on the size of forces that could feasibly be deployed into the North.

Military operations lower in the spectrum of conflict are possible

and will undoubtedly continue to be so. The two most likely situations are attacks on resource extraction facilities or the establishment of one or more divisionary lodgements in conjunction with a crisis situation between NATO and Warsaw Pact forces in Northwest Europe. Given the manifest impossibility of establishing fixed defences throughout the North to protect all possible targets, the Canadian response would inevitably be limited to counter attack forces designed to eliminate or at least neutralize hostile elements. The more mobile and capable such Canadian forces are the smaller they could be. While the protection of sovereignty is the first priority for the Canadian Forces, it is generally agreed that the greatest military threat resides in Northwest Europe. It would be folly in the extreme for Canada to be obliged to commit the bulk of her forces to northern defence in a war situation to defend targets or areas of only marginal military importance. Unless the essential military characteristic of the Canadian North--isolation--is recognized and appropriately equipped and trained forces are developed to take advantage of this fact, Canada could be obliged to respond to a military threat with conventional forces using conventional tactics.

The future of the national development role of the military in the North is somewhat more ambiguous. Major projects such as the operation of the NWT&Y Radio System or maintenance of the Northwest Highway System are probably things of the past since civil capability and the size and level of sophistication of other departments of government are significantly increased over interwar or immediate post war standards. There is probably room for military engineers to engage in short term construction projects such as bridge or airstrip building although such participation is not by any means a precondition of northern development.

Projects by military engineers offer troops the opportunity to participate in construction work of a type and in an environment that is not generally available in routine training. On the other hand, the opportunity to participate in such activities take troops away from normal all-arms training in conventional military operations. The pros and cons of both options probably balance.

The continued use of military forces to monitor sovereignty--threatening non military activities by other states is questionable. Certainly, if the program is to be continued the long range patrol aircraft of the air force must bear the brunt of meaningful activity. While the forces may be able to conduct northern surveillance, it remains to be shown how they could develop into a force capable of carrying out detailed reconnaissance or investigation. The vague notion that the use of military force is a feasible or appropriate response to private or commercial denials of national sovereignty is just that--a vague notion.

The periodic presence of elements of all three of the armed services in the North will probably continue. These deployments are seen in the popular Canadian mind as protecting sovereignty. There is no evidence that these activities have in any way served to deter unauthorized foreign activity in the Canadian North. On the other hand, they serve the needs of Canadian peace of mind and provide a vehicle to give substantial numbers of troops at least an exposure to the northern environment. Within the limitations of general purpose equipment available to the forces, these indoctrination exercises should be continued with emphasis on the Arctic, particularly the archipelagic regions.

In the final analysis, the time has long passed when Canada in general and its military establishment in particular can afford to ignore

the North, regard it as a barrier, or rely upon the United States to secure. The world grows more crowded; resources grow more scarce; global rivalries remain undiminished. The Canadian North contains both space and raw materials. If the area is to develop in the manner in which Canadians wish it to, and not be driven helter-skelter by international pressures, the Canadian military must be able to respond to the full range of potential threats in the coming decades. Although no man or organization can ever fully master the North, Canada's soldiers if they are truly to be "Keepers of the North" must make every effort to do so. It is a noble challenge.

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number. There is no particular logic to the filing system in either collection, although both have excellent finding aids.

In the event that any or all of these collections were to be transferred to the Public Archives of Canada, they would be incorporated into Record Group 24 and filed under the PAC system. The PAC would produce a finding aid to allow researchers to refer back to references using the older DND system.

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